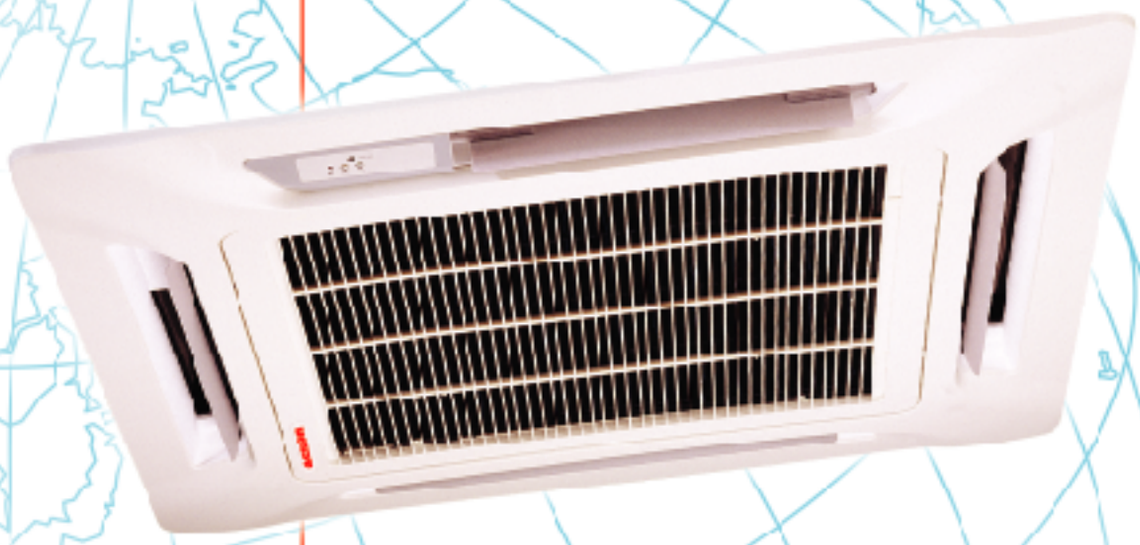
Models:

ACK□20 □A/AR
ACK□25 □A/AR
ACK□30 □A/AR
ACK□40 □A/AR
ACK□50 □A/AR

ACK□15 □B/BR
ACK□20 □B/BR
ACK□25 □B/BR
ACK□30 □B/BR

ACSON International



Ceiling Cassette Split Systems

Manual No: TMA-ACK-A-1230B

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1. SPECIAL FEATURES

ULTRA SLIM NEW STYLISH DESIGN PROFILE

This unit is contemporary in design and match even the most up to date interior decor. The slim, (only 22 mm for B-series and only 28 mm for A-series) and round profile front panel of this unit adds a touch of elegance to every decor.

TURBO MIXED FLOW FAN

Innovative design of highly efficient turbo fan produces an even air circulation in all direction.

BUILT-IN HIGH HEAD DRAIN PUMP

The unit has a built-in high head drain pump (with 500 mm drain head) to provide and ensure smoothness drainage of condensate water.

STRONG AND ROBUST

The unit is built from strong casing material and robust parts to ensure long lasting reliable service. The drain pan is made from the POLYSTYRENE with a plastic coating on the surface to ensure no leaking and condensation occur.

FRIENDLY SERVICEABILITY

The air filter, electrical parts, fan, fan motor and drain pump can all be inspected and replaced from the bottom of the unit by simply removing the air intake grille. The POLYSTYRENE drain pan and the heat exchanger coils can be removed from the unit easily by removing the front panel.

MICROCOMPUTER REMOTE CONTROLLER

The incorporated microprocessor offers more accurate control and with the following extra features:

- Fan motor speed can be set at high/medium/low or automatic.
- Timer on/off - the unit can be pre-set to switch on and off automatically.
- Electronic thermostat - room temperature is precisely controlled, resulting in energy saving and increase comfort.

WIRELESS REMOTE CONTROLLER

The compact wireless remote controller makes it possible to operate the air conditioner anywhere within the room.

2. SPECIFICATIONS

CEILING CASSETTE (COOLING ONLY)

MODEL			INDOOR UNIT		ACK 20A	ACK 25A	ACK 30A	ACK 40A	ACK 50A
			OUTDOOR UNIT		ALC 20B	ALC 25B	ALC 30B / ALC 30C	ALC 40C	ALC 50C
NOMINAL COOLING CAPACITY				kcal/h	5292	6300	7056 / 7560	10080	12600
				W	6155	7327	8204 / 8792	11723	14654
				Btu/h	21000	25000	28000 / 30000	40000	50000
INDOOR UNIT	POWER SOURCE			V/Ph/Hz	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60				
	REFRIGERANT / CONTROL				R22 / CAPILLARY TUBE IN OUTDOOR		R22 / CAPILLARY TUBE IN INDOOR		
	FAN	AIR FLOW		cfm/cmm	770 / 21.81	810 / 22.94	920 / 26.05	1020 / 28.88	1080 / 30.58
		FAN MOTOR		50 Hz	6 POLES x 35W	6 POLES x 50W	6 POLES x 65W	6 POLES x 85W	6 POLES x 120W
				60 Hz	6 POLES x 29W	6 POLES x 45W	6 POLES x 60W	6 POLES x 147W	6 POLES x 169W
		RATED INPUT POWER (W)		50 Hz	127	151	164	192	253
				60 Hz	137	160	198	308	329
		RATED RUNNING CURRENT (A)		50 Hz	0.53	0.65	0.69	0.80	1.08
				60 Hz	0.62	0.73	0.93	1.42	1.50
	COIL	TUBE	MATERIAL		S.B.C.			S.I.G.C	
			DIAMETER	mm/in	9.52 / 3/8			7.0 / 0.28	
			THICKNESS	mm/in	0.35 / 0.014			0.27 / 0.01	
		FIN	MATERIAL		ALUMINIUM			ALUMINIUM (HYDROPHILIC TYPE)	
			THICKNESS	mm/in	0.11 / 0.0043				
			ROW		2	2	2	3	3
			FIN PER INCH		12	14	16	20	20
	FACE AREA			m^2/ft^2	0.469 / 5.022				
	DIMENSION ( ) - WITH PANEL	HEIGHT		mm/in	335 (363) / 13.2 (14.3)				
		WIDTH		mm/in	820 (930) / 32.2 (36.6)				
		DEPTH		mm/in	820 (930) / 32.2 (36.6)				
	WEIGHT (UNIT + PANEL)			kg	21 + 4	32 + 4	35 + 4	38 + 4	40 + 4
	SOUND PRESSURE LEVEL (H / M / L)			dBA	42 / 39 / 37	45 / 42 / 40	49 / 45 / 43	51 / 48 / 46	53 / 52 / 50
	CONTROL	ROOM TEMPERATURE			MICROCOMPUTER CONTROLLED THERMOSTAT				
		AIR DISCHARGE			4-WAY AUTOMATIC LOUVER (UP & DOWN)				
		OPERATION			LCD WIRELESS MICROCOMPUTER REMOTE CONTROL / LED WIRED MICROCOMPUTER REMOTE CONTROL				
	CONDENSATE DRAIN SIZE			mm/in	19.05 / 3/4				
	AIR FILTER				CORRUGATED WASHABLE SARAN NET (OPTIONAL IONIZER FILTER)				
	PACKING DIMENSION ( ) - PANEL	HEIGHT		mm/in	380 (130) / 15.0 (5.1)				
		WIDTH		mm/in	920 (1020) / 36.2 (40.2)				
		DEPTH		mm/in	920 (1000) / 36.2 (39.4)				
OUTDOOR UNIT	COMPRESSOR	POWER SOURCE		V/Ph/Hz	220 - 240 / 1 / 50 / < 380 - 420 / 3 / 50 >			380 - 420 / 3 / 50	
				V/Ph/Hz	208 - 230 / 1 / 60			200 - 230 / 3 / 60	
		COMPRESSOR TYPE			ROTARY (RECIPROCATING) HERMETIC			RECIPROCATING HERMETIC	
		CAPACITOR - µF		50 Hz	45 / < NIL >	45 / < NIL >	50	45 / < NIL >	NIL / NIL
		1Ø / < 3Ø >		60 Hz	40	(35)	-	45	NIL / NIL
		LOCK ROTOR AMPERE - A		50 Hz	56.0 / < 21.4 >	56.5 / < 24.9 >	66.0	85.0 / < 39 >	45.0 / 62.0
		1Ø / < 3Ø >		60 Hz	37.0	(70)	-	88.0	78 / 106
		RATED RUNNING CURRENT - A		50 Hz	10.00 / < 3.7 >	13.80 / < 4.8 >	14.55	12.66 / < 5.2 >	5.80 / 8.30
		1Ø / < 3Ø >		60 Hz	8.75	(12.26)	-	16.30	11.70 / 14.50
		RATED INPUT POWER - W		50 Hz	2080 / < 1950 >	2710 / < 2560 >	2980	2577 / < 3050 >	3486 / 4943
		1Ø / < 3Ø >		60 Hz	1909	(2635)	-	3420	4040 / 5270
		PROTECTION DEVICE			OVERLOAD PROTECTION			O/L PROTECTION AND MANUAL RESET HIGH/LOW PRESSURE SW.	
	FAN	POWER SOURCE		V/Ph/Hz	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60				
		FAN TYPE / DRIVE			PROPELLER / DIRECT				
		BLADE MATERIAL			GLASS REINFORCE ACRYL STYRENE RESIN				
		DIAMETER		mm/in	420 / 16.5			609.6 / 24.0	
		RATED RUNNING CURRENT (A)		50 Hz	0.56		0.7	1.09	
				60 Hz	0.76		-	1.23	
		RATED OUTPUT POWER (W)		50 Hz	55		80	145	
				60 Hz	55		-	145	
		RATED INPUT POWER (W)		50 Hz	133		166	241	
				60 Hz	166		-	261	
	COIL	TUBE	MATERIAL		S.B.C.	S.I.G.C.	S.I.G.C.	S.B.C.	
			DIAMETER	mm/in	9.52 / 3/8				
			THICKNESS	mm/in	0.35 / 0.014	0.36 / 0.014 AVERAGE		0.35 / 0.014	
		FIN	MATERIAL		ALUMINIUM (SPLIT FIN TYPE)			ALUMINIUM (CORRUGATED FIN TYPE)	
			THICKNESS	mm/in	0.127 / 0.005				
			ROW		2		2 / 1	2	2
			FIN PER INCH		14		16 / 16	14	16
	FACE AREA			m^2/ft^2	0.51 / 5.53			0.87 / 9.33	
	DIMENSION	HEIGHT		mm/in	646 / 25.40			850 / 33.46	
		WIDTH		mm/in	840 / 33.10			1030 / 40.53	
		DEPTH		mm/in	330 / 13.00			400 / 15.75	
	WEIGHT			kg	57	58	58 / 95	100	105
	SOUND PRESSURE LEVEL			dBA	52	53	56 / 60	59	62
	CASING	MATERIAL			GALVANISED MILD STEEL				
		THICKNESS		mm/in	0.8 / 0.031				
		FINISHING			POLYESTER POWDER				
	PIPE	TYPE			FLARE VALVE				
		SIZE	LIQUID	mm/in	6.35 / 1/4	9.52 / 3/8		9.52 / 3/8	
			GAS	mm/in	15.88 / 5/8	15.88 / 5/8		19.05 / 3/4	
	PACKING DIMENSION	HEIGHT		mm/in	710 / 27.95			1000 / 39.37	
		WIDTH		mm/in	957 / 37.68			1200 / 47.24	
		DEPTH		mm/in	461 / 18.15			560 / 22.05	

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-89
3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 35°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

Abbreviation
S.B.C. - SEAMLESS BARE COPPER
S.I.G.C - SEAMLESS INNER GROOVE COPPER

CEILING CASSETTE (HEAT PUMP)

MODEL			**INDOOR UNIT**		ACK 20AR	ACK 25AR	ACK 30AR	ACK 40AR	ACK 50AR
			OUTDOOR UNIT		ALC 20BR	ALC 25BR	ALC 30CR	ALC 40CR	ALC 50CR
NOMINAL				**kcal/h**	5040	6300	7560	10080	12096
COOLING				**W**	5862	7327	8792	11723	14068
CAPACITY				**Btu/h**	20000	25000	30000	40000	48000
NOMINAL				**kcal/h**	5040	6300	7812	10332	12600
HEATING				**W**	5862	7327	9086	12016	14654
CAPACITY				**Btu/h**	20000	25000	31000	41000	50000
INDOOR UNIT	**POWER SOURCE**			**V/Ph/Hz**	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60				
	REFRIGERANT / CONTROL				R22 / CAPILLARY TUBE IN OUTDOOR		R22 / CAPILLARY TUBE & TXV IN OUTDOOR		
	FAN	**AIR FLOW**		**cfm/cmm**	770 / 21.81	810 / 22.94	920 / 26.05	1020 / 28.88	1080 / 30.58
		FAN MOTOR		**50Hz**	6 POLES x 35W	6 POLES x 50W	6 POLES x 65W	6 POLES x 85W	6 POLES x 120W
				60Hz	6 POLES x 29W	6 POLES x 45W	6 POLES x 60W	6 POLES x 147W	6 POLES x 169W
		RATED INPUT POWER (W)		**W (50/60Hz)**	127 / 137	151 / 160	164 / 198	192 / 308	253 / 329
		RATED RUNNING CURRENT (A)		**A (50/60Hz)**	0.53 / 0.62	0.65 / 0.73	0.69 / 0.93	0.80 / 1.42	1.08 / 1.50
	COIL	**TUBE**	**MATERIAL**		S.B.C.			S.I.G.C	
			DIAMETER	**mm/in**	9.52 / 3/8			7.0 / 0.28	
			THICKNESS	**mm/in**	0.35 / 0.014			0.27 / 0.01	
		FIN	**MATERIAL**		ALUMINIUM			ALUMINIUM (HYDROPHILIC TYPE)	
			THICKNESS	**mm/in**	0.11 / 0.0043				
			ROW		2	2	2	3	3
			FIN PER INCH		12	16	16	20	20
		FACE AREA		**m^2/ft^2**	0.469 / 5.022				
	DIMENSION		**HEIGHT**	**mm/in**	335 (363) / 13.2 (14.3)				
	( ) - WITH PANEL		**WIDTH**	**mm/in**	820 (930) / 32.2 (36.6)				
			DEPTH	**mm/in**	820 (930) / 32.2 (36.6)				
	WEIGHT (UNIT + PANEL)			**kg**	21 + 4	32 + 4	35 + 4	38 + 4	40 + 4
	SOUND PRESSURE LEVEL (H / M / L)			**dBA**	42 / 39 / 37	45 / 42 / 40	49 / 45 / 43	51 / 48 / 46	53 / 52 / 50
	CONTROL		**ROOM TEMPERATURE**		MICROCOMPUTER CONTROLLED THERMOSTAT				
			AIR DISCHARGE		4 - WAY AUTOMATIC LOUVER (UP & DOWN)				
			OPERATION		LCD WIRELESS / LED WIRED MICROCOMPUTER REMOTE CONTROL				
	CONDENSATE DRAIN SIZE			**mm/in**	19.05 / 3/4				
	AIR FILTER				WASHABLE SARAN NET (OPTIONAL IONIZER FILTER)				
	PACKING		**HEIGHT**	**mm/in**	380 (130) / 15.0 (5.1)				
	DIMENSION		**WIDTH**	**mm/in**	920 (1020) / 36.2 (40.2)				
	( ) - PANEL		**DEPTH**	**mm/in**	920 (1000) / 36.2 (39.4)				
OUTDOOR UNIT	**POWER SOURCE**			**V/Ph/Hz**	220 - 240 / 1 / 50 / < 380 - 420 / 3 / 50 >			380 - 420 / 3 / 50	
				V/Ph/Hz	208 - 230 / 1 / 60			200 - 230 / 3 / 60	
	COMPRESSOR	**COMPRESSOR TYPE**			ROTARY HERMETIC		RECIPROCATING HERMETIC		
		CAPACITOR - µF		**50 Hz**	45 / < NIL >	45 / < NIL >	45 / < NIL >	NIL	NIL
		1Ø / < 3Ø >		**60 Hz**	40	60	45	NIL	NIL
		LOCK ROTOR AMPERE - A		**50 Hz**	56 / < 21.4 >	57 / < 24.9 >	85 / < 39 >	45	62
		1Ø / < 3Ø >		**60 Hz**	39.6	50	88	78	106
		RATED RUNNING CURR. (COOLING) - A		**50 Hz**	9.84 / < 3.7 >	13.0 / < 4.8 >	13.4 / < 5.0 >	6.0	7.8
		1Ø / < 3Ø >		**60 Hz**	8.30	11.6	15.3	11.2	14.8
		RATED RUNNING CURR. (HEATING) - A		**50 Hz**	9.84 / < 3.7 >	12.7 / < 4.9 >	12.9 / < 4.9 >	5.4	7.2
		1Ø / < 3Ø >		**60 Hz**	8.70	11.4	14.2	10.0	12.4
		RATED INPUT POWER (COOLING) - W		**50 Hz**	1987 / < 1950 >	2730 / < 2560 >	2643 / < 2900 >	3431	4634
		1Ø / < 3Ø >		**60 Hz**	1777	2486	3144	3595	4905
		RATED INPUT POWER (HEATING) - W		**50 Hz**	2008 / < 1960 >	2650 / < 2640 >	2562 / < 2756 >	2921	4036
		1Ø / < 3Ø >		**60 Hz**	1824	2420	2846	3042	3739
		PROTECTION DEVICE			OVERLOAD PROTECTION		OVERLOAD PROTECTION & MANUAL RESET HIGH PRESSURE SWITCH		
	FAN	**POWER SOURCE**		**V/Ph/Hz**	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60				
		FAN TYPE / DRIVE			PROPELLER / DIRECT				
		BLADE MATERIAL			GLASS REINFORCED ACRYL STYRENE RESIN				
		DIAMETER		**mm/in**	420.0 / 16.5		609.6 / 24.0		
		RATED RUNNING CURRENT		**A (50/60Hz)**	0.56 / 0.76		1.09 / 1.25		
		RATED OUTPUT POWER		**W (50/60Hz)**	55 / 55		145 / 145		
		RATED INPUT POWER		**W (50/60Hz)**	133 / 165		241 / 261		
	COIL	**TUBE**	**MATERIAL**		S.B.C	S.I.G.C	S.B.C	S.I.G.C	S.I.G.C
			DIAMETER	**mm/in**	9.52 / 3/8				
			THICKNESS	**mm/in**	0.35 / 0.014	0.36 / 0.014 AVERAGE	0.35 / 0.014	0.36 / 0.014 AVERAGE	
		FIN	**MATERIAL**		ALUMINIUM (SLIT FIN TYPE)		ALUMINIUM (CORRUGATED FIN TYPE)		
			THICKNESS	**mm/in**	0.127 / 0.005				
			ROW		2		2		
			FIN PER INCH		14		16		
		FACE AREA		**m^2/ft^2**	0.51 / 5.53		0.87 / 9.33		
	DIMENSION		**HEIGHT**	**mm/in**	646 / 25.40		850 / 33.46		
			WIDTH	**mm/in**	840 / 33.10		1029 / 40.53		
			DEPTH	**mm/in**	330 / 13.00		400 / 15.75		
	WEIGHT			**kg**	57	58	95	100	105
	SOUND PRESSURE LEVEL			**dBA**	52	53	60	59	62
	CASING		**MATERIAL**		GALVANISED MILD STEEL				
			THICKNESS	**mm/in**	0.8 / 0.031				
			FINISHING		POLYESTER POWDER				
	PIPE	**TYPE**			FLARE VALVE				
		SIZE	**LIQUID**	**mm/in**	6.35 / 1/4	9.52 / 3/8		9.52 / 3/8	
			GAS	**mm/in**	15.88 / 5/8	15.88 / 5/8		19.05 / 3/4	
	PACKING		**HEIGHT**	**mm/in**	710 / 27.95		1000 / 39.37		
	DIMENSION		**WIDTH**	**mm/in**	957 / 37.68		1200 / 47.24		
			DEPTH	**mm/in**	461 / 18.15		560 / 22.05		

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-89
3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
b) HEATING - 21.1°C DB / 15.6°C WB INDOOR AND 8.3°C DB / 6.1°C WB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING – 19.4°C DB / 13.9°C WB INDOOR AND 35°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR
b) HEATING – 21.0°C DB INDOOR AND –8.3°C DB / -9.4°C WB OUTDOOR TO 26.7°C DB INDOOR AND 23.9°C DB / 18.3°C WB OUTDOOR

Abbreviation
S.B.C. - SEAMLESS BARE COPPER
S.I.G.C - SEAMLESS INNER GROOVE COPPER

CEILING CASSETTE (COOLING ONLY – R407C)

MODEL			**INDOOR UNIT**		ACK 20A	ACK 25A	ACK 30A	ACK 40A	ACK 50A
			OUTDOOR UNIT		A4LC 20B	A4LC 25B	A4LC 30C	A4LC 40C	A4LC 50C
NOMINAL				**kcal/h**	4612	5292	7560	9576	12600
COOLING				**W**	5363	6155	8792	11134	14650
CAPACITY				**Btu/h**	18300	21000	30000	38000	50000
INDOOR UNIT	**POWER SOURCE**			**V/Ph/Hz**	220 - 240 / 1 / 50				
	REFRIGERANT / CONTROL				R407C / CAPILLARY TUBE (OUTDOOR)		R407C / CAPILLARY TUBE (INDOOR)		
	FAN	**AIR FLOW**		**cfm/cmm**	770 / 21.81	810 / 22.94	920 / 26.05	1020 / 28.88	1080 / 30.58
		FAN MOTOR			6 POLES x 35W	6 POLES x 50W	6 POLES x 65W	6 POLES x 85W	6 POLES x 120W
		RATED INPUT POWER		**W**	127	151	164	192	253
		RATED RUNNING CURRENT		**A**	0.53	0.65	0.69	0.80	1.08
	COIL	**TUBE**	**MATERIAL**		S.B.C.			S.I.G.C	
			DIAMETER	**mm/in**	9.52 / 3/8			7.0 / 0.28	
			THICKNESS	**mm/in**	0.35 / 0.014			0.27 / 0.01	
		FIN	**MATERIAL**		ALUMINIUM			ALUMINIUM (HYDROPHILIC TYPE)	
			THICKNESS	**mm/in**	0.11 / 0.0043				
			ROW		2	2	2	3	3
			FIN PER INCH		12	14	16	20	20
		FACE AREA		**m^2/ft^2**	0.469 / 5.022	0.469 / 5.022	0.469 / 5.022	0.469 / 5.022	0.469 / 5.022
	DIMENSION ( ) - WITH PANEL		**HEIGHT**	**mm/in**	335 (363) / 13.2 (14.3)				
			WIDTH	**mm/in**	820 (930) / 32.2 (36.6)				
			DEPTH	**mm/in**	820 (930) / 32.2 (36.6)				
	WEIGHT (UNIT + PANEL)			**kg**	21 + 4	32 + 4	35 + 4	38 + 4	40 + 4
	SOUND PRESSURE LEVEL (H / M / L)			**dBA**	42 / 39 / 37	45 / 42 / 40	49 / 45 / 43	51 / 48 / 46	53 / 52 / 50
	CONTROL		**ROOM TEMPERATURE**		MICROCOMPUTER CONTROLLED THERMOSTAT				
			AIR DISCHARGE		4-WAY AUTOMATIC LOUVER (UP & DOWN)				
			OPERATION		LCD WIRELESS MICROCOMPUTER REMOTE CONTROL / LED WIRED MICROCOMPUTER REMOTE CONTROL				
	CONDENSATE DRAIN SIZE			**mm/in**	19.05 / 3/4				
	AIR FILTER				CORRUGATED WASHABLE SARAN NET (OPTIONAL IONIZER FILTER)				
	PACKING DIMENSION ( ) - PANEL		**HEIGHT**	**mm/in**	380 (130) / 15.0 (5.1)				
			WIDTH	**mm/in**	920 (1020) / 36.2 (40.2)				
			DEPTH	**mm/in**	920 (1000) / 36.2 (39.4)				
OUTDOOR UNIT	**POWER SOURCE**			**V/Ph/Hz**	220 - 240 / 1 / 50			380 - 420 / 3 / 50	
	COMPRESSOR	**COMPRESSOR TYPE**			ROTARY HERMETIC		SCROLL		
		CAPACITOR		**µF**	45	50	50	NIL	NIL
		LOCK ROTOR AMPERE		**A**	54	58	78	45	62
		RATED RUNNING CURRENT		**A**	9.91	12.50	11.40	6.30	8.20
		RATED INPUT POWER		**W**	2112	2660	2560	3741	4328
		PROTECTION DEVICE			OVERLOAD PROTECTION		O/L PROTECTION AND MANUAL RESET HIGH/LOW PRESSURE SW.		
	FAN	**POWER SOURCE**		**V/Ph/Hz**	220 - 240 / 1 / 50				
		FAN TYPE / DRIVE			PROPELLER / DIRECT				
		BLADE MATERIAL			GLASS REINFORCE ACRYL STYRENE RESIN				
		DIAMETER		**mm/in**	420 / 16.5		609.6 / 24.0		
		RATED RUNNING CURRENT		**A**	0.56		1.09		
		RATED OUTPUT POWER		**W**	55		145		
		RATED INPUT POWER		**W**	133		241		
	COIL	**TUBE**	**MATERIAL**		SEAMLESS COPPER				
			DIAMETER	**mm/in**	9.52 / 3/8				
			THICKNESS	**mm/in**	0.36 / 0.014				
		FIN	**MATERIAL**		ALUMINIUM (SPLIT FIN TYPE)				
			THICKNESS	**mm/in**	0.127 / 0.005				
			ROW		2		1	2	2
			FIN PER INCH		14		16	16	16
		FACE AREA		**m^2/ft^2**	0.51 / 5.53		0.87 / 9.33		
	DIMENSION		**HEIGHT**	**mm/in**	646 / 25.40		850 / 33.46		
			WIDTH	**mm/in**	840 / 33.10		1030 / 40.53		
			DEPTH	**mm/in**	330 / 13.00		400 / 15.75		
	WEIGHT			**kg**	57	58	95	100	105
	SOUND PRESSURE LEVEL			**dBA**	52	53	60	59	62
	CASING		**MATERIAL**		GALVANISED MILD STEEL				
			THICKNESS	**mm/in**	0.8 / 0.031				
			FINISHING		EPOXY POLYESTER POWDER				
	PIPE	**TYPE**			FLARE VALVE / AEROQUIP		FLARE VALVE		
		SIZE	**LIQUID**	**mm/in**	6.35 / 1/4	9.52 / 3/8		9.52 / 3/8	
			GAS	**mm/in**	15.88 / 5/8	15.88 / 5/8		19.05 / 3/4	
	PACKING DIMENSION		**HEIGHT**	**mm/in**	710 / 27.95		1000 / 39.37		
			WIDTH	**mm/in**	957 / 37.68		1200 / 47.24		
			DEPTH	**mm/in**	461 / 18.15		560 / 22.05		
	REFRIGERANT CHARGE			**kg**	1.65	1.65	1.90	3.13	3.15

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-89
3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 35°C DB OUTDOOR TO
26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

Abbreviation
S.B.C. - SEAMLESS BARE COPPER
S.I.G.C - SEAMLESS INNER GROOVE COPPER

CEILING CASSETTE (HEAT PUMP – R407C)

MODEL		**INDOOR UNIT**		ACK 20AR	ACK 25AR	ACK 30AR	ACK 40AR	ACK 50AR
		OUTDOOR UNIT		A4LC 20BR	A4LC 25BR	A4LC 30CR	A4LC 40CR	A4LC 50CR
NOMINAL			**kcal/h**	4536	5170	7310	9830	12100
COOLING			**W**	5274	6008	8499	11430	14068
CAPACITY			**Btu/h**	18000	20500	29000	39000	48000
NOMINAL			**kcal/h**	4790	6050	7812	10332	12600
HEATING			**W**	5569	7034	9083	12013	14654
CAPACITY			**Btu/h**	19000	24000	31000	41000	50000
INDOOR UNIT	**POWER SOURCE**		**V/Ph/Hz**	220 - 240 / 1 / 50				
	REFRIGERANT / CONTROL			R407C / CAPILLARY TUBE (OUTDOOR)		R407C / TXV (OUTDOOR)	R407C / CAPILLARY TUBE + TXV (OUTDOOR)	
	FAN	**AIR FLOW**	**cfm/cmm**	770 / 21.81	810 / 22.94	920 / 26.05	1020 / 28.88	1080 / 30.58
		FAN MOTOR		6 POLES x 35W	6 POLES x 50W	6 POLES x 65W	6 POLES x 85W	6 POLES x 120W
		RATED INPUT POWER	**W**	127	151	164	192	253
		RATED RUNNING CURRENT	**A**	0.53	0.65	0.69	0.8	1.08
	COIL	**TUBE** **MATERIAL**		S.B.C.			S.I.G.C	
		TUBE **DIAMETER**	**mm/in**	9.52 / 3/8			7.0 / 0.28	
		TUBE **THICKNESS**	**mm/in**	0.35 / 0.014			0.27 / 0.01	
		FIN **MATERIAL**		ALUMINIUM			ALUMINIUM (HYDROPHILIC TYPE)	
		FIN **THICKNESS**	**mm/in**	0.11 / 0.0043				
		FIN **ROW**		2	2	2	3	3
		FIN **FIN PER INCH**		12	16	16	20	20
	FACE AREA		**m^2/ft^2**	0.469 / 5.022	0.469 / 5.022	0.469 / 5.022	0.469 / 5.022	0.469 / 5.022
	DIMENSION	**HEIGHT**	**mm/in**	335 (363) / 13.2 (14.3)				
	( ) - WITH PANEL	**WIDTH**	**mm/in**	820 (930) / 32.2 (36.6)				
		DEPTH	**mm/in**	820 (930) / 32.2 (36.6)				
	WEIGHT (UNIT + PANEL)		**kg**	21 + 4	32 + 4	35 + 4	38 + 4	40 + 4
	SOUND PRESSURE LEVEL (H / M / L)		**dBA**	42 / 39 / 37	45 / 42 / 40	49 / 45 / 43	51 / 48 / 46	53 / 52 / 50
	CONTROL	**ROOM TEMPERATURE**		MICROCOMPUTER CONTROLLED THERMOSTAT				
		AIR DISCHARGE		4 - WAY AUTOMATIC LOUVER (UP & DOWN)				
		OPERATION		LCD WIRELESS / LED WIRED MICROCOMPUTER REMOTE CONTROL				
	CONDENSATE DRAIN SIZE		**mm/in**	19.05 / 3/4				
	AIR FILTER			WASHABLE SARAN NET (OPTIONAL IONIZER FILTER)				
	PACKING	**HEIGHT**	**mm/in**	380 (130) / 15.0 (5.1)				
	DIMENSION	**WIDTH**	**mm/in**	920 (1020) / 36.2 (40.2)				
	( ) - PANEL	**DEPTH**	**mm/in**	920 (1000) / 36.2 (39.4)				
OUTDOOR UNIT	**POWER SOURCE**		**V/Ph/Hz**	220 - 240 / 1 / 50			380 - 420 / 3 / 50	
	COMPRESSOR	**COMPRESSOR TYPE**		ROTARY HERMETIC		SCROLL		
		CAPACITOR	**µF**	45	50	50	NIL	NIL
		LOCK ROTOR AMPERE	**A**	54	58	78	45	62
		RATED RUNNING CURRENT (COOLING)	**A**	9.50	12.60	11.50	6.20	8.80
		RATED RUNNING CURRENT (HEATING)	**A**	10.10	12.50	11.40	5.90	7.80
		RATED INPUT POWER (COOLING)	**W**	2002	2571	2424	3565	4615
		RATED INPUT POWER (HEATING)	**W**	2096	2549	2407	3280	3734
		PROTECTION DEVICE		OVERLOAD PROTECTION		O/L PROTECTION AND MANUAL RESET HIGH PRESSURE SW.		
	FAN	**POWER SOURCE**	**V/Ph/Hz**	220 - 240 / 1 / 50				
		FAN TYPE / DRIVE		PROPELLER / DIRECT				
		BLADE MATERIAL		GLASS REINFORCED ACRYL STYRENE RESIN				
		DIAMETER	**mm/in**	420.0 / 16.5		609.6 / 24.0		
		RATED RUNNING CURRENT	**A**	0.56		1.09		
		RATED OUTPUT POWER	**W**	55		145		
		RATED INPUT POWER	**W**	133		241		
	COIL	**TUBE** **MATERIAL**		SEAMLESS COPPER				
		TUBE **DIAMETER**	**mm/in**	9.52 / 3/8				
		TUBE **THICKNESS**	**mm/in**	0.36/ 0.014				
		FIN **MATERIAL**		ALUMINIUM (SLIT FIN TYPE)				
		FIN **THICKNESS**	**mm/in**	0.127 / 0.005				
		FIN **ROW**		2		2		
		FIN **FIN PER INCH**		14		16		
	FACE AREA		**m^2/ft^2**	0.51 / 5.53		0.87 / 9.33		
	DIMENSION	**HEIGHT**	**mm/in**	646 / 25.40		850 / 33.46		
		WIDTH	**mm/in**	840 / 33.10		1029 / 40.53		
		DEPTH	**mm/in**	330 / 13.00		400 / 15.75		
	WEIGHT		**kg**	57	58	95	100	105
	SOUND PRESSURE LEVEL		**dBA**	52	53	60	59	62
	CASING	**MATERIAL**		GALVANISED MILD STEEL				
		THICKNESS	**mm/in**	0.8 / 0.031				
		FINISHING		EPOXY POLYESTER POWDER				
	PIPE	**TYPE**		FLARE VALVE / AEROQUIP		FLARE VALVE		
		SIZE **LIQUID**	**mm/in**	6.35 / 1/4	9.52 / 3/8		9.52 / 3/8	
		SIZE **GAS**	**mm/in**	15.88 / 5/8	15.88 / 5/8		19.05 / 3/4	
	PACKING	**HEIGHT**	**mm/in**	710 / 27.95		1000 / 39.37		
	DIMENSION	**WIDTH**	**mm/in**	957 / 37.68		1200 / 47.24		
		DEPTH	**mm/in**	461 / 18.15		560 / 22.05		
	REFRIGERANT CHARGE		**kg**	1.70	1.65	2.35	3.10	3.35

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3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
b) HEATING - 21.1°C DB / 15.6°C WB INDOOR AND 8.3°C DB / 6.1°C WB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING – 19.4°C DB / 13.9°C WB INDOOR AND 35°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR
b) HEATING – 21.0°C DB INDOOR AND –8.3°C DB / -9.4°C WB OUTDOOR TO 26.7°C DB INDOOR AND 23.9°C DB / 18.3°C WB OUTDOOR

Abbreviation
S.B.C. - SEAMLESS BARE COPPER
S.I.G.C - SEAMLESS INNER GROOVE COPPER

CEILING CASSETTE (COOLING ONLY)

MODEL			**INDOOR UNIT**		ACK 15B	ACK 20B	ACK 25B	ACK 30B	
			OUTDOOR UNIT		ALC 15B	ALC 20B	ALC 25B	ALC 30B	ALC 30C
NOMINAL				**kcal/h**	3150	4788	6048	7182	7560
COOLING				**W**	3664	5569	7034	8353	8792
CAPACITY				**Btu/h**	12500	19000	24000	28500	30000
INDOOR UNIT	**POWER SOURCE**			**V/Ph/Hz**	220 - 240 / 1 / 50				
	REFRIGERANT / CONTROL				R22 / CAPILLARY TUBE IN OUTDOOR			R22 / CAPILLARY TUBE IN INDOOR	
	FAN	**AIR FLOW**		**cfm/cmm**	440 / 12.5	440 / 12.5	500 / 14.5	560 / 15.9	
		FAN MOTOR			6 POLES	6 POLES	6 POLES	6 POLES	
		RATED INPUT POWER		**W**	68	68	79	93	
		RATED RUNNING CURRENT		**A**	0.3	0.3	0.3	0.4	
	COIL	**TUBE**	**MATERIAL**		S.I.G.C				
			DIAMETER	**mm/in**	9.52 / 3/8				
			THICKNESS	**mm/in**	0.35 / 0.014				
		FIN	**MATERIAL**		ALUMINIUM (SLIT FIN)				
			THICKNESS	**mm/in**	0.11 / 0.0043				
			ROW		2				
			FIN PER INCH		14				
		FACE AREA		**m^2/ft^2**	0.38 / 4.1				
	DIMENSION		**HEIGHT**	**mm/in**	293 (345) / 11.5 (13.6)				
	( ) - WITH PANEL		**WIDTH**	**mm/in**	650 (727) / 25.6 (28.6)				
			DEPTH	**mm/in**	650 (727) / 25.6 (28.6)				
	WEIGHT (UNIT + PANEL)			**kg**	30 + 3	30 + 3	31 + 3	32 + 3	
	SOUND PRESSURE LEVEL (H / M / L)			**dBA**	42 / 38 / 35	42 / 38 / 35	45 / 42 / 40	48 / 45 / 43	
	CONTROL		**ROOM TEMPERATURE**		MICROCOMPUTER CONTROLLED THERMOSTAT				
			AIR DISCHARGE		4 WAY MANUAL LOUVER				
			OPERATION		WIRELESS OR WIRED MICROCOMPUTER REMOTE CONTROL				
	CONDENSATE DRAIN SIZE			**mm/in**	19.05 / 3/4				
	AIR FILTER				CORRUGATED WASHABLE SARAN NET (OPTIONAL IONIZER FILTER)				
	PACKING		**HEIGHT**	**mm/in**	360 (110) / 14.2 (4.3)				
	DIMENSION		**WIDTH**	**mm/in**	725 (840) / 28.5 (33.1)				
	( ) - PANEL		**DEPTH**	**mm/in**	725 (840) / 28.5 (33.1)				
OUTDOOR UNIT	**POWER SOURCE**			**V/Ph/Hz**	220 - 240 / 1 / 50				
	COMPRESSOR	**COMPRESSOR TYPE**			ROTARY HERMETIC				RECIP. HER.
		CAPACITOR		**μF**	30	45	45	50	45
		LOCK ROTOR AMP.		**A**	25	56	57	66	85
		RATED RUNNING CURRENT		**A**	5.7	10.1	12.3	14.6	13.1
		RATED INPUT POWER		**W**	1323	2112	2660	2983	2674
		PROTECTION DEVICE			OVERLOAD PROTECTION				O/L & H-L PRESSURE SW
	FAN	**POWER SOURCE**		**V/Ph/Hz**	220 - 240 / 1 / 50				
		FAN TYPE / DRIVE			PROPELLER / DIRECT				
		BLADE MATERIAL			GLASS REINFORCED ACRYL STYRENE RESIN				
		DIAMETER		**mm/in**	355 / 14	420 / 16.5			610 / 24
		RATED RUNNING CURRENT		**A**	0.28	0.56		0.7	1.09
		RATED OUTPUT POWER		**W**	30	55		80	145
		RATED INPUT POWER		**W**	62	133		166	241
	COIL	**TUBE**	**MATERIAL**		S.I.G.C	S.B.C	S.I.G.C	S.I.G.C	S.B.C.
			DIAMETER	**mm/in**	9.52 / 3/8				
			THICKNESS	**mm/in**	0.35 / 0.014		0.36 / 0.014 AVERAGE		0.35 / 0.014
		FIN	**MATERIAL**		ALUMINIUM (SLIT FIN)				ALUMINIUM (CORR.)
			THICKNESS	**mm/in**	0.127 / 0.005				
			ROW		1	2	2	2	1
			FIN PER INCH		19	14	14	16	16
		FACE AREA		**m^2/ft^2**	0.32 / 3.5	0.51 / 5.53			0.87 / 9.33
	DIMENSION		**HEIGHT**	**mm/in**	494 / 19.4	646 / 25.4			850 / 33.5
			WIDTH	**mm/in**	740 / 29.1	840 / 33.1			1030 / 40.6
			DEPTH	**mm/in**	270 / 10.6	330 / 13.0			400 / 15.8
	WEIGHT			**kg**	34	57	58	58	95
	SOUND PRESSURE LEVEL			**dBA**	49	52	53	56	60
	CASING		**MATERIAL**		GALVANISED MILD STEEL				
			THICKNESS	**mm/in**	0.8 / 0.031				
			FINISHING		POLYESTER POWDER				
	PIPE	**TYPE**			FLARE VALVE				
		SIZE	**LIQUID**	**mm/in**	6.35 / 1/4	6.35 / 1/4	9.52 / 3/8		
			GAS	**mm/in**	12.70 / 1/2	15.88 / 5/8	15.88 / 5/8		
	PACKING DIMENSION		**HEIGHT**	**mm/in**	558 / 22.0	710 / 28.0			1000 / 39.4
			WIDTH	**mm/in**	851 / 33.5	957 / 37.7			1200 / 47.2
			DEPTH	**mm/in**	401 / 15.8	461 / 18.1			560 / 22.1

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3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING - 19.4°C DB / 13.9°C WB INDOOR AND 35°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR

Abbreviation
S.B.C. - SEAMLESS BARE COPPER
S.I.G.C - SEAMLESS INNER GROOVE COPPER

CEILING CASSETTE (HEAT PUMP)

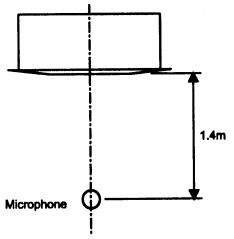
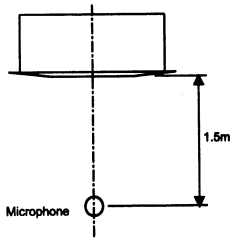
MODEL		**INDOOR UNIT**		ACK 15BR	ACK 20BR	ACK 25BR	ACK 30BR
		OUTDOOR UNIT		ALC 15BR	ALC 20BR	ALC 25BR	ALC 30CR
NOMINAL			**kcal/h**	0	4536	5796	7056
COOLING			**W**	0	5275	6741	8206
CAPACITY			**Btu/h**	0	18000	23000	28000
NOMINAL			**kcal/h**	0	4914	5796	7308
HEATING			**W**	0	5715	6741	8499
CAPACITY			**Btu/h**	0	19500	23000	29000
INDOOR UNIT	**POWER SOURCE**		**V/Ph/Hz**	220 - 240 / 1 / 50			
	REFRIGERANT / CONTROL			R22 / CAPILLARY TUBE IN OUTDOOR			
	FAN	**AIR FLOW**	**cfm/cmm**	440 / 12.5	440 / 12.5	500 / 14.5	560 / 15.9
		FAN MOTOR		6 POLES	6 POLES	6 POLES	6 POLES
		RATED INPUT POWER	**W**	68	68	79	93
		RATED RUNNING CURRENT	**A**	0.3	0.3	0.3	0.4
	COIL	**TUBE** **MATERIAL**		S.I.G.C			
		TUBE **DIAMETER**	**mm/in**	9.52 / 3/8			
		TUBE **THICKNESS**	**mm/in**	0.35 / 0.014			
		FIN **MATERIAL**		ALUMINIUM (SLIT FIN)			
		FIN **THICKNESS**	**mm/in**	0.11 / 0.0043			
		FIN **ROW**		2			
		FIN **FIN PER INCH**		14			
		FACE AREA	**m^2/ft^2**	0.38/4.1			
	DIMENSION ( ) - WITH PANEL	**HEIGHT**	**mm/in**	293 (345) / 11.5 (13.6)			
		WIDTH	**mm/in**	650 (727) / 25.6 (28.6)			
		DEPTH	**mm/in**	650 (727) / 25.6 (28.6)			
	WEIGHT (UNIT + PANEL)		**kg**	30 + 3	30 + 3	31 + 3	32 + 3
	SOUND PRESSURE LEVEL (H / M / L)		**dBA**	42 / 38 / 35	42 / 38 / 35	45 / 42 / 40	48 / 45 / 43
	CONTROL	**ROOM TEMPERATURE**		MICROCOMPUTER CONTROLLED THERMOSTAT			
		AIR DISCHARGE		4 WAY MANUAL LOUVER			
		OPERATION		WIRELESS OR WIRED MICROCOMPUTER REMOTE CONTROL			
	CONDENSATE DRAIN SIZE		**mm/in**	19.05 / 3/4			
	AIR FILTER			CORRUGATED WASHABLE SARAN NET (OPTIONAL IONIZER FILTER)			
	PACKING DIMENSION ( ) - PANEL	**HEIGHT**	**mm/in**	360 (110) / 14.2 (4.3)			
		WIDTH	**mm/in**	725 (840) / 28.5 (33.1)			
		DEPTH	**mm/in**	725 (840) / 28.5 (33.1)			
OUTDOOR UNIT	**POWER SOURCE**		**V/Ph/Hz**	220 - 240 / 1 / 50			
	COMPRESSOR	**COMPRESSOR TYPE**		ROTARY HERMETIC			RECIPROCATING HER.
		CAPACITOR	**µF**	30	45	45	45
		LOCK ROTOR AMP.	**A**	25	56	57	85
		RATED RUNNING CURRENT (COOLING)	**A**	-	10.1	12.3	11.8
		RATED RUNNING CURRENT (HEATING)	**A**	-	9.3	11.6	12.9
		RATED INPUT POWER (COOLING)	**W**	-	2112	2660	2385
		RATED INPUT POWER (HEATING)	**W**	-	1886	2461	2469
		PROTECTION DEVICE		OVERLOAD PROTECTION			O/L & HI PRESSURE SW.
	FAN	**POWER SOURCE**	**V/Ph/Hz**	220 - 240 / 1 / 50			
		FAN TYPE / DRIVE		PROPELLER / DIRECT			
		BLADE MATERIAL		GLASS REINFORCED ACRYL STYRENE RESIN			
		DIAMETER	**mm/in**	355 / 14	420 / 16.5		610 / 24
		RATED RUNNING CURRENT	**A**	0.28	0.56		1.09
		RATED OUTPUT POWER	**W**	30	55		145
		RATED INPUT POWER	**W**	62	133		241
	COIL	**TUBE** **MATERIAL**		S.I.G.C	S.B.C	S.I.G.C	S.B.C
		TUBE **DIAMETER**	**mm/in**	9.52 / 3/8			
		TUBE **THICKNESS**	**mm/in**	0.35 / 0.014		0.36 / 0.014 AVERAGE	0.35 / 0.014
		FIN **MATERIAL**		ALUMINIUM (SLIT FIN)			ALUMINIUM (CORR.)
		FIN **THICKNESS**	**mm/in**	0.127 / 0.005			
		FIN **ROW**		1	2	2	1
		FIN **FIN PER INCH**		19	14	14	16
		FACE AREA	**m^2/ft^2**	0.32 / 3.5	0.51 / 5.53		0.87 / 9.33
	DIMENSION	**HEIGHT**	**mm/in**	494 / 19.4	646 / 25.4		850 / 33.5
		WIDTH	**mm/in**	740 / 29.1	840 / 33.1		1030 / 40.6
		DEPTH	**mm/in**	270 / 10.6	330 / 13.0		400 / 15.8
	WEIGHT		**kg**	34	57	58	95
	SOUND PRESSURE LEVEL		**dBA**	49	52	53	60
	CASING	**MATERIAL**		GALVANISED MILD STEEL			
		THICKNESS	**mm/in**	0.8 / 0.031			
		FINISHING		POLYESTER POWDER			
	PIPE	**TYPE**		FLARE VALVE			
		SIZE **LIQUID**	**mm/in**	6.35 / 1/4	6.35 / 1/4	9.52 / 3/8	
		SIZE **GAS**	**mm/in**	12.70 / 1/2	15.88 / 5/8	15.88 / 5/8	
	PACKING DIMENSION	**HEIGHT**	**mm/in**	558 / 22.0	710 / 28.0		1000 / 39.4
		WIDTH	**mm/in**	851 / 33.5	957 / 37.7		1200 / 47.2
		DEPTH	**mm/in**	401 / 15.8	461 / 18.1		560 / 22.1

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ARI 210/240-89
3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 26.7°C DB / 19.4°C WB INDOOR AND 35°C DB OUTDOOR
b) HEATING - 21.1°C DB / 15.6°C WB INDOOR AND 8.3°C DB / 6.1°C WB OUTDOOR
4) ALLOWABLE OPERATING RANGE
a) COOLING – 19.4°C DB / 13.9°C WB INDOOR AND 35°C DB OUTDOOR TO 26.7°C DB / 19.4°C WB INDOOR AND 46.1°C DB OUTDOOR
b) HEATING – 21.0°C DB INDOOR AND –8.3°C DB / -9.4°C WB OUTDOOR TO 26.7°C DB INDOOR AND 23.9°C DB / 18.3°C WB OUTDOOR

Abbreviation
S.B.C. - SEAMLESS BARE COPPER
S.I.G.C - SEAMLESS INNER GROOVE COPPER

3. NOISE LEVEL

Model	1/1 Octave A-weighed sound pressure level (dBA), ref 20μPa																							
	125Hz			250Hz			500Hz			1kHz			2kHz			4kHz			8kHz			Ave.		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
ACK20A/AR	46	44	43	45	43	42	40	37	35	38	33	31	32	28	26	21	18	17	14	12	11	42	39	37
ACK25A/AR	48	45	43	46	43	42	43	40	38	39	35	32	33	29	27	27	21	19	19	15	14	45	42	40
ACK30A/AR	50	48	46	48	45	43	47	43	41	43	38	35	37	32	30	35	31	30	28	27	26	49	45	43
ACK40A/AR	50	48	46	49	47	45	49	47	46	46	43	41	39	36	34	38	34	30	31	25	23	51	48	46
ACK50A/AR	54	52	51	52	50	49	51	50	49	48	46	45	43	41	39	42	40	39	34	32	31	53	52	50

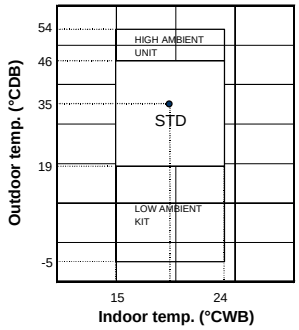
Model	Measuring location
ACK20A/AR **ACK25A/AR**	**Standard : JIS C 9612** 
ACK30A/AR **ACK40A/AR** **ACK50A/AR**	**Standard : JIS B 8615** 

4. OPERATING RANGE

Ensure the operating temperature is in allowable range.

Cooling only

Cooling

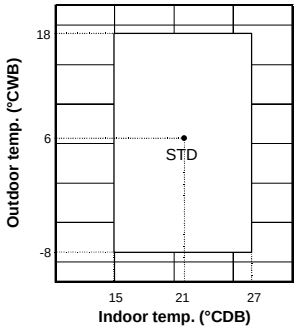


⚠ Caution :

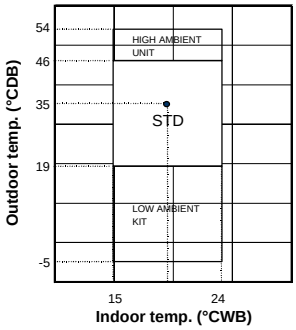
The use of your air conditioner outside the range of working temperature and humidity can result in serious failure.

Heat pump

Heating



Cooling



5. PERFORMANCE TABLE

MODEL : ACK20A / ALC20B

Indoor DB ° C	Indoor WB ° C	Capacity kW	Outdoor DB, ° C					
			19.4	25	30	35	40	46
26.7	13.9	TC	5.353	5.146	4.961	4.776	4.592	4.370
		SC	5.353	5.146	4.961	4.776	4.592	4.370
	15	TC	5.644	5.431	5.242	5.052	4.862	4.635
		SC	5.333	5.114	4.918	4.723	4.527	4.293
	18	TC	6.439	6.211	6.007	5.804	5.600	5.356
		SC	5.278	5.026	4.802	4.577	4.353	4.083
	19.4	TC	6.809	6.574	6.365	6.155	5.945	5.693
		SC	5.252	4.986	4.747	4.509	4.271	3.985
	20	TC	6.968	6.709	6.477	6.245	6.013	5.735
		SC	5.241	4.951	4.692	4.433	4.174	3.863
	22	TC	7.498	7.156	6.851	6.546	6.240	5.874
		SC	5.205	4.837	4.508	4.179	3.850	3.456
	24	TC	8.028	7.604	7.225	6.846	6.468	6.013
		SC	5.168	4.722	4.324	3.925	3.526	3.048

MODEL : ACK25A / ALC25B

Indoor DB ° C	Indoor WB ° C	Capacity kW	Outdoor DB, ° C					
			19.4	25	30	35	40	46
26.7	13.9	TC	6.081	5.896	5.731	5.566	5.401	5.202
		SC	5.993	5.826	5.678	5.529	5.381	5.202
	15	TC	6.861	6.522	6.220	5.918	5.616	5.253
		SC	5.861	5.690	5.536	5.383	5.230	5.046
	18	TC	8.987	8.230	7.554	6.879	6.203	5.392
		SC	5.502	5.316	5.150	4.984	4.818	4.619
	19.4	TC	9.979	9.027	8.177	7.327	6.477	5.457
		SC	5.334	5.142	4.970	4.798	4.627	4.420
	20	TC	10.404	9.409	8.521	7.633	6.745	5.679
		SC	5.263	5.053	4.866	4.679	4.491	4.267
	22	TC	11.821	10.684	9.668	8.653	7.637	6.419
		SC	5.023	4.756	4.518	4.280	4.041	3.755
	24	TC	13.239	11.959	10.816	9.673	8.530	7.159
		SC	4.784	4.459	4.170	3.880	3.591	3.244

MODEL : ACK30A / ALC30C

Indoor DB ° C	Indoor WB ° C	Capacity kW	Outdoor DB, ° C					
			19.4	25	30	35	40	46
26.7	13.9	TC	8.165	7.761	7.399	7.038	6.676	6.243
		SC	7.742	7.427	7.145	6.863	6.581	6.243
	15	TC	8.790	8.287	7.838	7.389	6.940	6.401
		SC	7.440	7.162	6.914	6.666	6.417	6.120
	18	TC	10.492	9.722	9.034	8.346	7.658	6.833
		SC	6.615	6.440	6.284	6.128	5.971	5.784
	19.4	TC	11.286	10.391	9.592	8.792	7.993	7.034
		SC	6.230	6.103	5.990	5.876	5.763	5.627
	20	TC	11.627	10.703	9.878	9.052	8.227	7.237
		SC	6.065	5.927	5.804	5.682	5.559	5.411
	22	TC	12.762	11.741	10.830	9.919	9.007	7.914
		SC	5.515	5.342	5.187	5.032	4.878	4.692
	24	TC	13.897	12.780	11.782	10.785	9.787	8.590
		SC	4.965	4.756	4.569	4.383	4.196	3.972

MODEL : ACK40A / ALC40C

Indoor DB ° C	Indoor WB ° C	Capacity kW	Outdoor DB, ° C					
			19.4	25	30	35	40	46
26.7	13.9	TC	11.260	10.642	10.090	9.538	8.986	8.324
		SC	9.934	9.595	9.292	8.989	8.687	8.324
	15	TC	11.857	11.181	10.578	9.975	9.372	8.648
		SC	9.661	9.339	9.051	8.764	8.476	8.131
	18	TC	13.483	12.652	11.909	11.167	10.425	9.534
		SC	8.919	8.642	8.396	8.149	7.902	7.606
	19.4	TC	14.242	13.338	12.531	11.723	10.916	9.947
		SC	8.572	8.317	8.089	7.862	7.634	7.361
	20	TC	14.567	13.636	12.805	11.973	11.142	10.144
		SC	8.424	8.144	7.894	7.644	7.394	7.094
	22	TC	15.652	14.630	13.718	12.806	11.893	10.799
		SC	7.928	7.565	7.241	6.917	6.593	6.204
	24	TC	16.736	15.624	14.631	13.638	12.645	11.454
		SC	7.433	6.987	6.589	6.191	5.792	5.315

MODEL : ACK50A / ALC50C

Indoor DB ° C	Indoor WB ° C	Capacity kW	Outdoor DB, ° C					
			19.4	25	30	35	40	46
26.7	13.9	TC	12.597	12.135	11.723	11.311	10.899	10.404
		SC	10.854	10.759	10.675	10.590	10.506	10.404
	15	TC	13.716	13.093	12.536	11.980	11.423	10.755
		SC	10.490	10.412	10.343	10.274	10.206	10.123
	18	TC	16.770	15.705	14.754	13.803	12.852	11.711
		SC	9.495	9.466	9.439	9.413	9.386	9.355
	19.4	TC	18.195	16.924	15.789	14.654	13.519	12.157
		SC	9.032	9.024	9.017	9.011	9.004	8.996
	20	TC	18.806	17.466	16.269	15.072	13.875	12.439
		SC	8.833	8.787	8.747	8.706	8.666	8.617
	22	TC	20.842	19.271	17.868	16.465	15.062	13.378
		SC	8.170	7.998	7.845	7.692	7.538	7.354
	24	TC	22.878	21.076	19.467	17.857	16.248	14.317
		SC	7.507	7.209	6.943	6.677	6.411	6.091

All the data above are based on 26.7°C entering DB. To obtain data for different entering DB,

please use the formula below :

Sensible capacity (EDB) = Sensible capacity (26.7) + 1.23 x L/s x (1 - BPF) (EDB - 26.7) / 1000

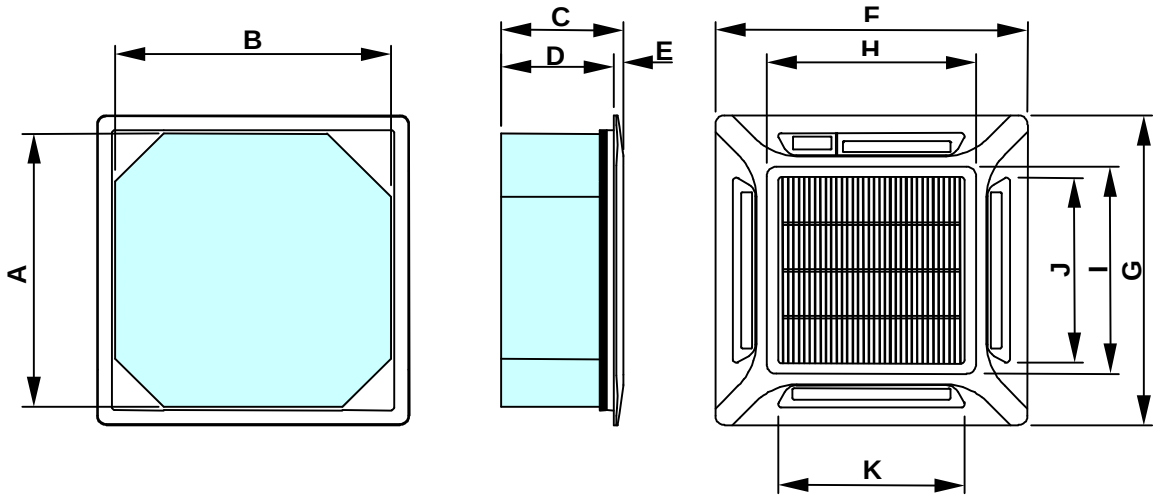
Where, BPF = Bypass factor
EDB = Entering dry bulb temperature, ° C

	ACK20A	ACK25A	ACK30A	ACK40A	ACK50A
Bypass factor	0.61	0.47	0.49	0.53	0.50

6. OUTLINES AND DIMENSIONS

INDOOR UNIT

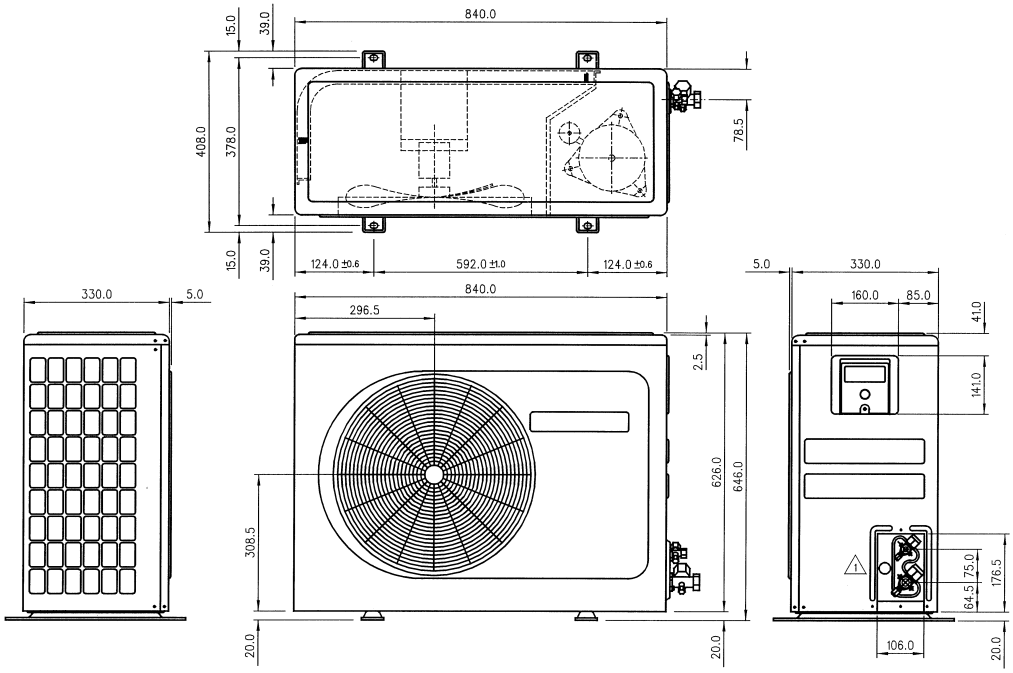
ACK 20/ 25/ 30/ 40/ 50A/AR
ACK 15/ 20/ 25/ 30 B/BR



MODEL	A	B	C	D	E	F	G	H	I	J	K
ACK-A (All model)	820	820	363	335	28	930	930	624	622	555	555
ACK-B (All model)	650	650	345	323	22	727	727	489	489	444	444

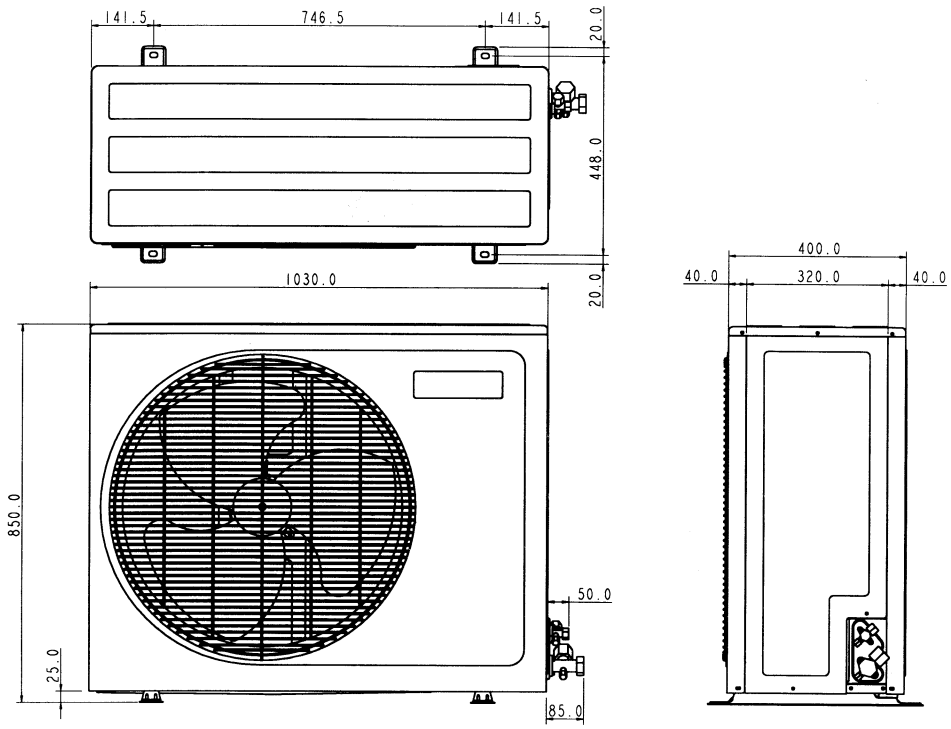
OUTDOOR UNIT

ALC 20/ 25 B/BR, ALC 30B
A4LC 20/ 25 B/BR



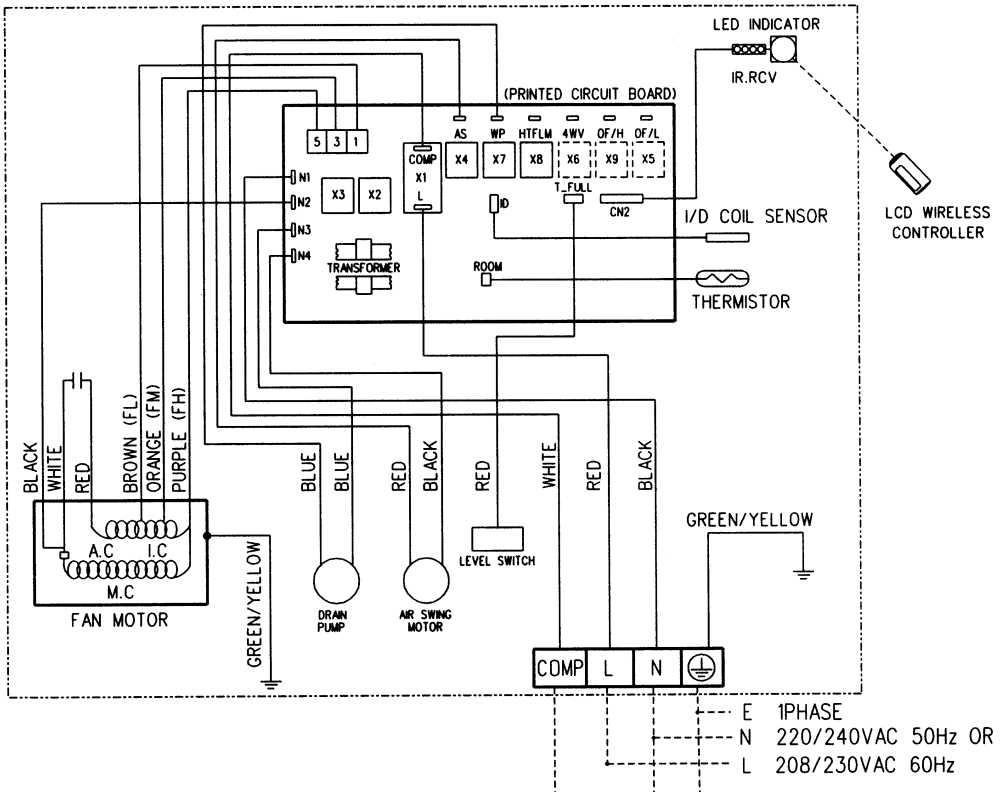
OUTDOOR UNIT

ALC 30/ 40/ 50C/CR
A4LC 30/ 40/ 50 C/CR

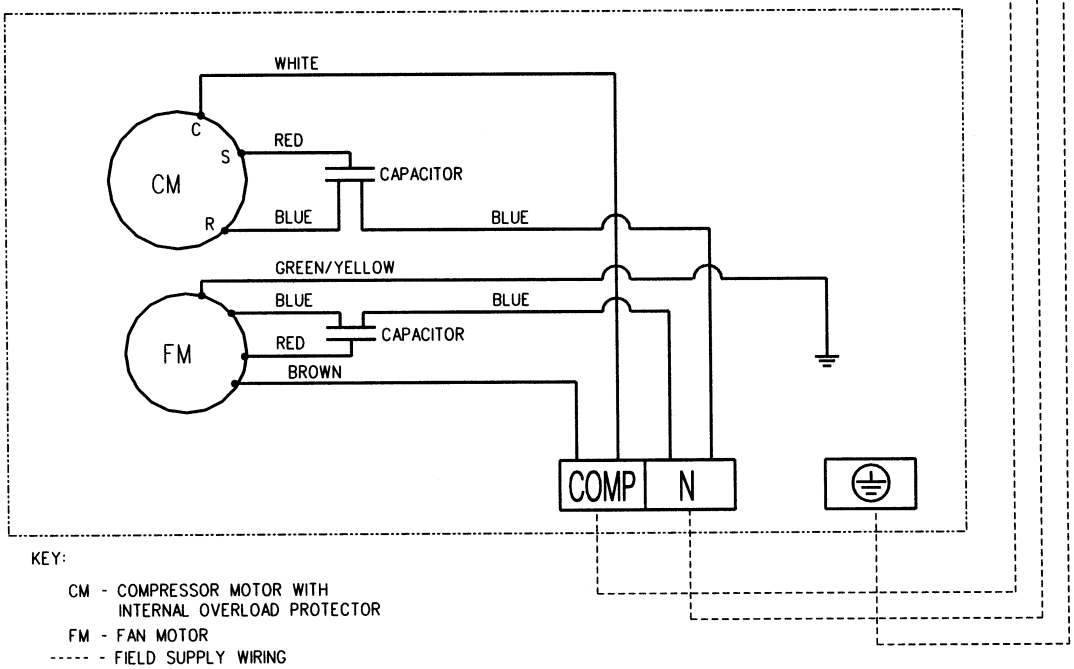


7. WIRING DIAGRAMS

INDOOR UNIT (COOLING ONLY)
MODEL : ACK 20/ 25A (C3A BOARD)



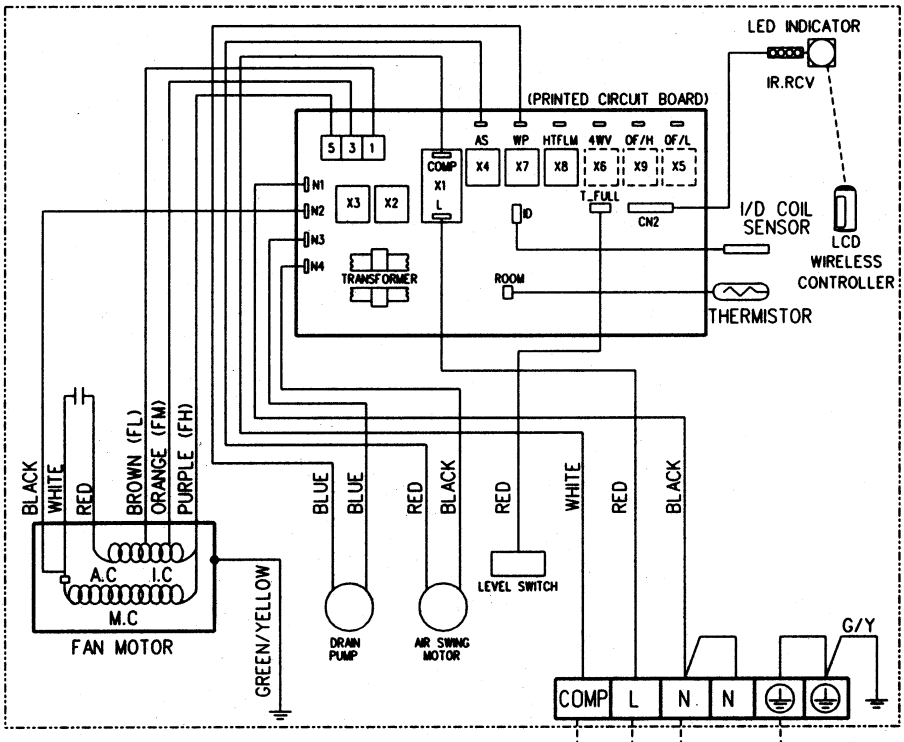
OUTDOOR UNIT
MODEL : ALC/ A4LC 20/ 25B



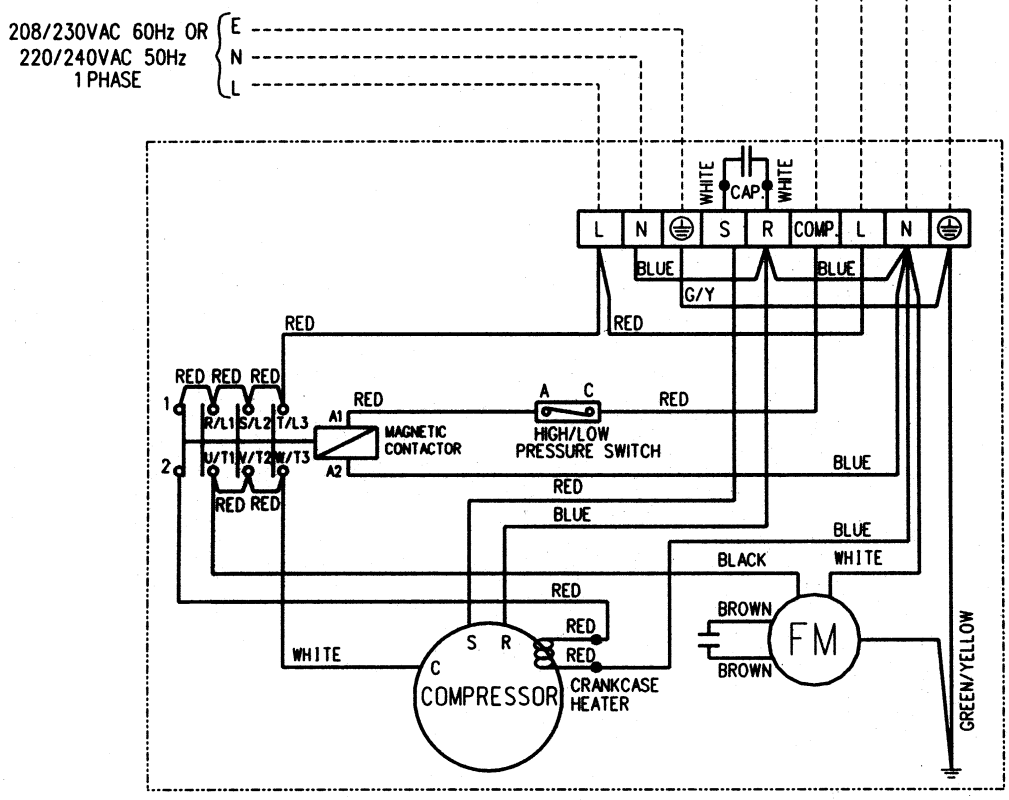
KEY:

CM - COMPRESSOR MOTOR WITH INTERNAL OVERLOAD PROTECTOR
FM - FAN MOTOR
----- - FIELD SUPPLY WIRING

INDOOR UNIT (COOLING ONLY)
MODEL : ACK 30A (C3A BOARD)



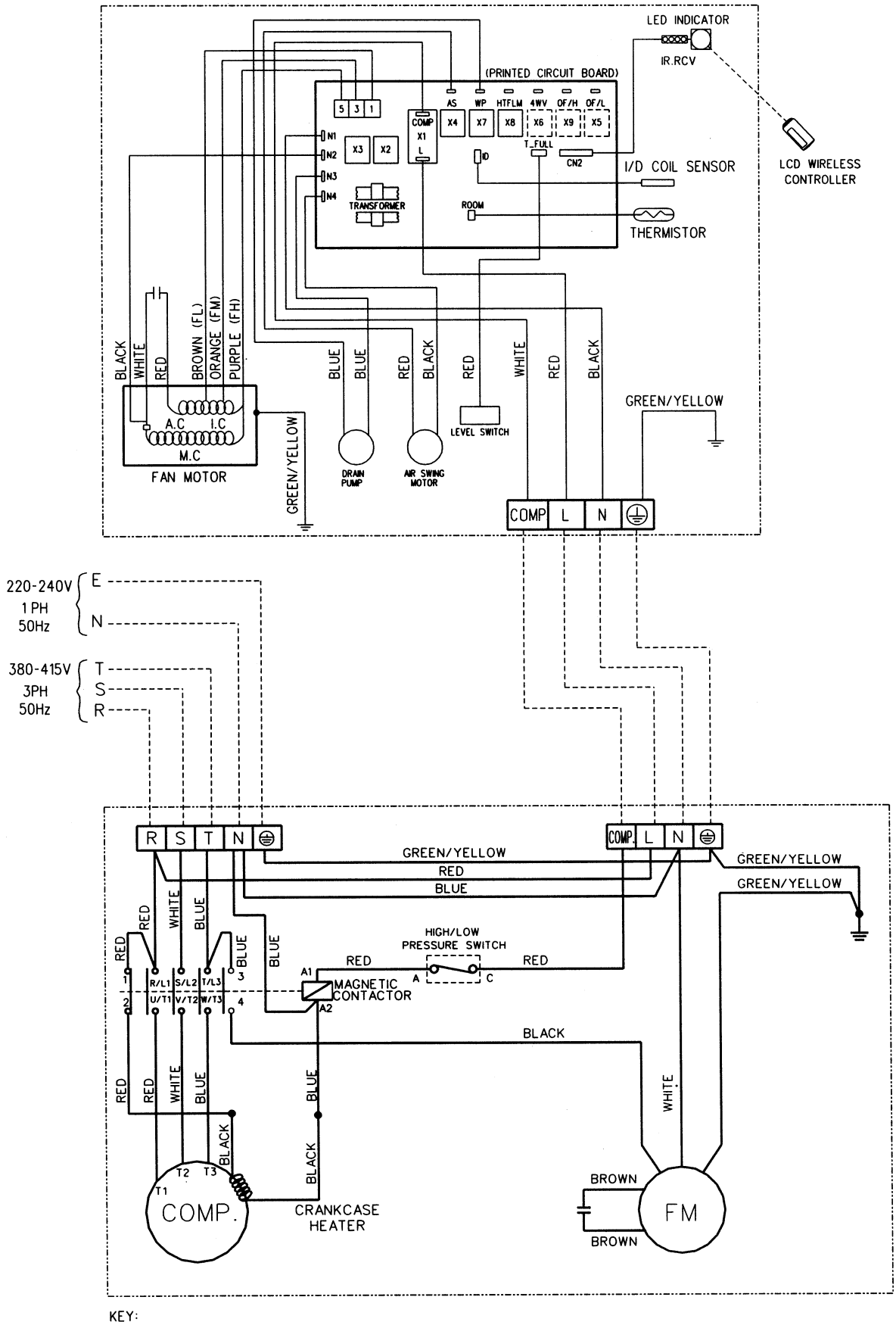
OUTDOOR UNIT
MODEL : ALC / A4LC 30C



KEY:

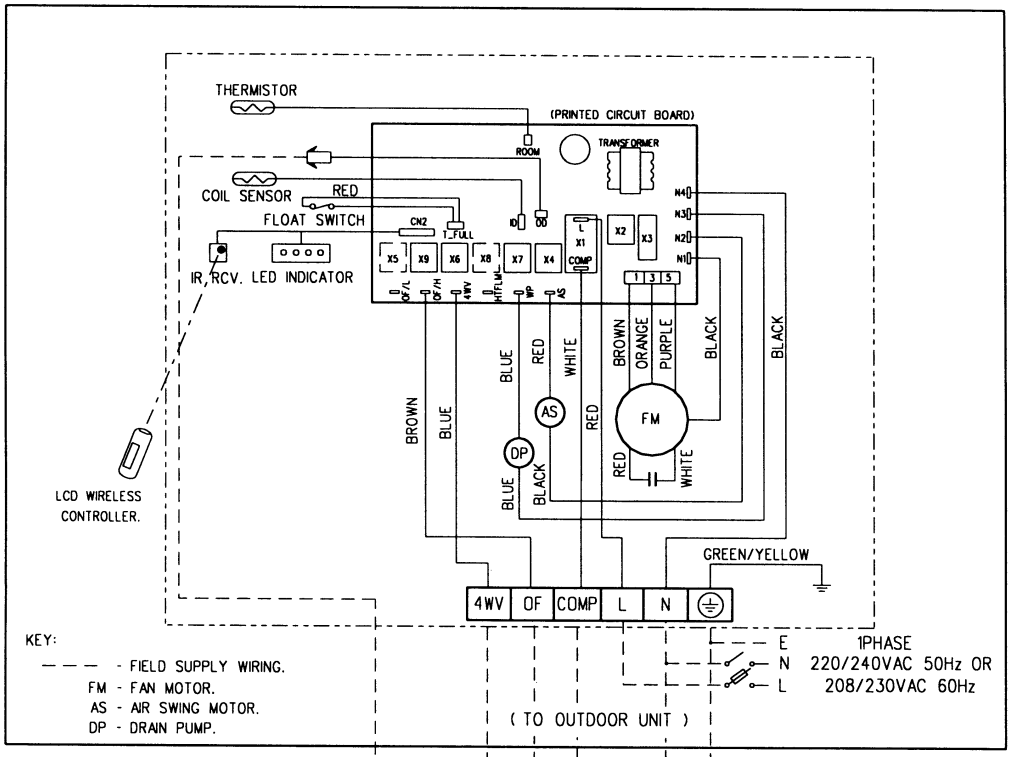
------- - FIELD SUPPLY WIRING

INDOOR UNIT (COOLING ONLY)
MODEL : ACK 40/ 50A (C3A BOARD)

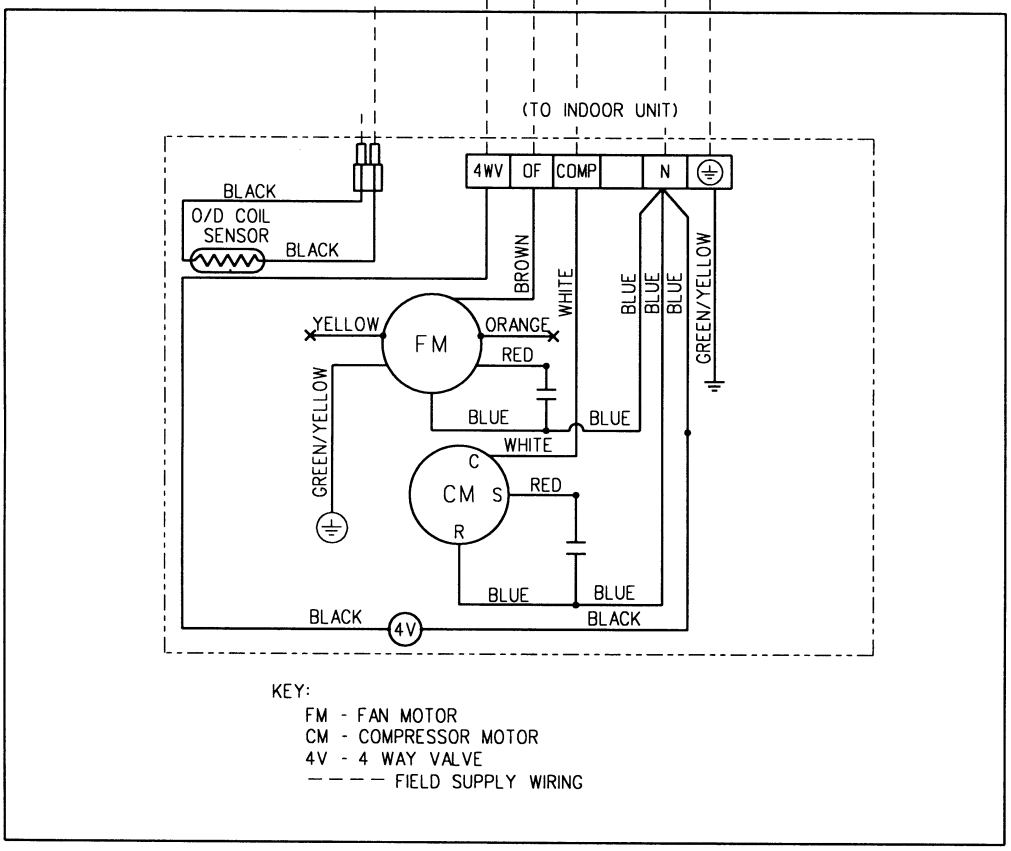


OUTDOOR UNIT
MODEL : ALC / A4LC 40/ 50C

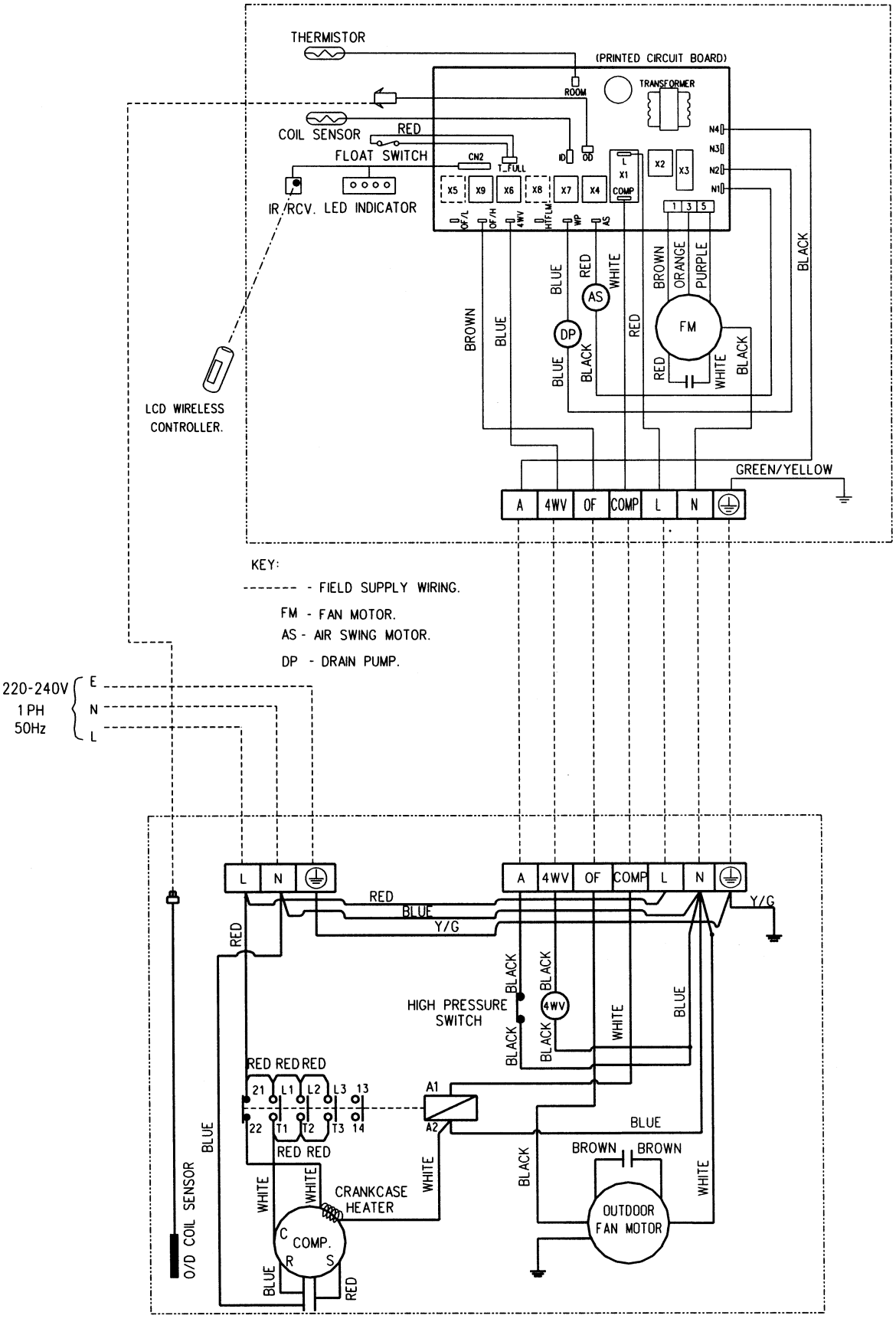
INDOOR UNIT (HEAT PUMP)
MODEL : ACK 20/ 25AR (C3A BOARD)



OUTDOOR UNIT
MODEL : ALC / A4LC 20/ 25BR

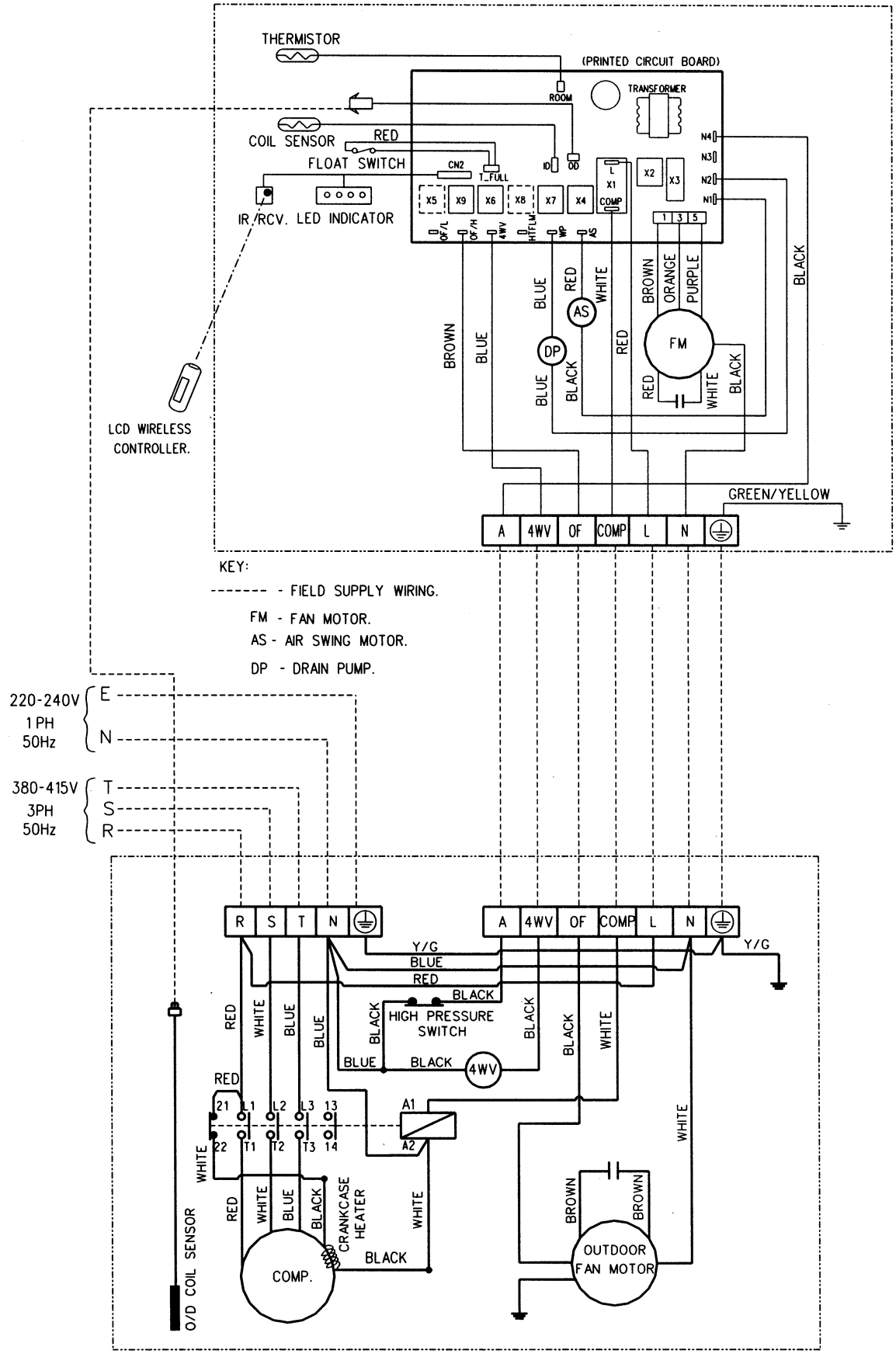


INDOOR UNIT (HEAT PUMP)
MODEL : ACK 30AR (C3A BOARD)



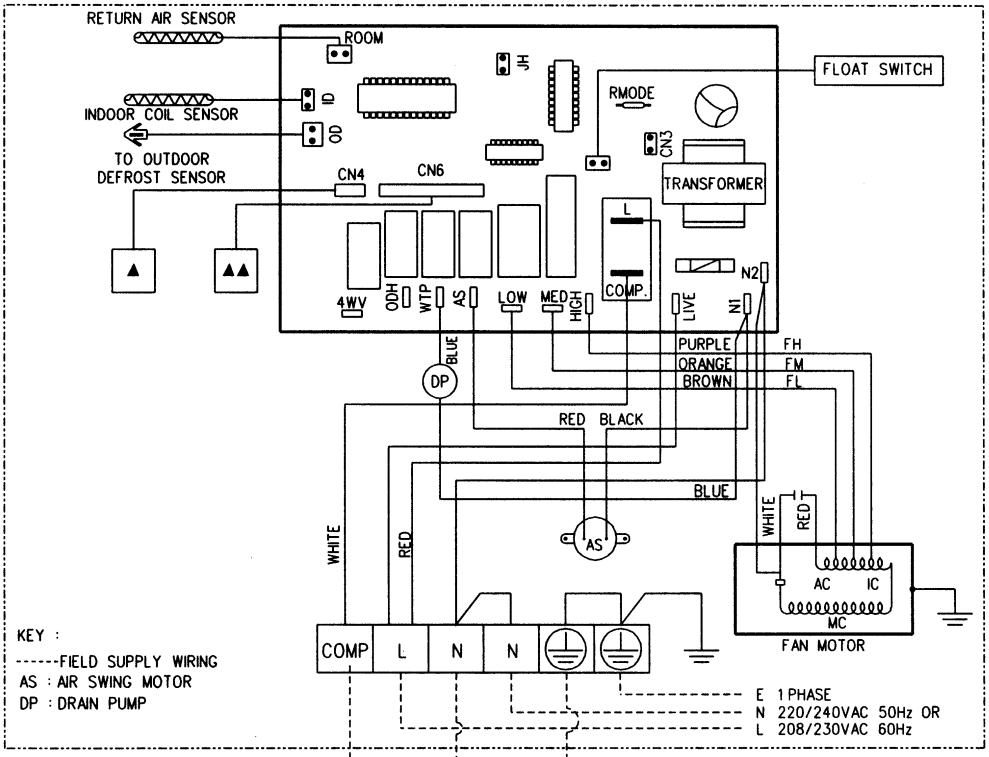
OUTDOOR UNIT
MODEL : ALC / A4LC 30CR

INDOOR UNIT (HEAT PUMP)
MODEL : ACK 40/ 50AR (C3A BOARD)

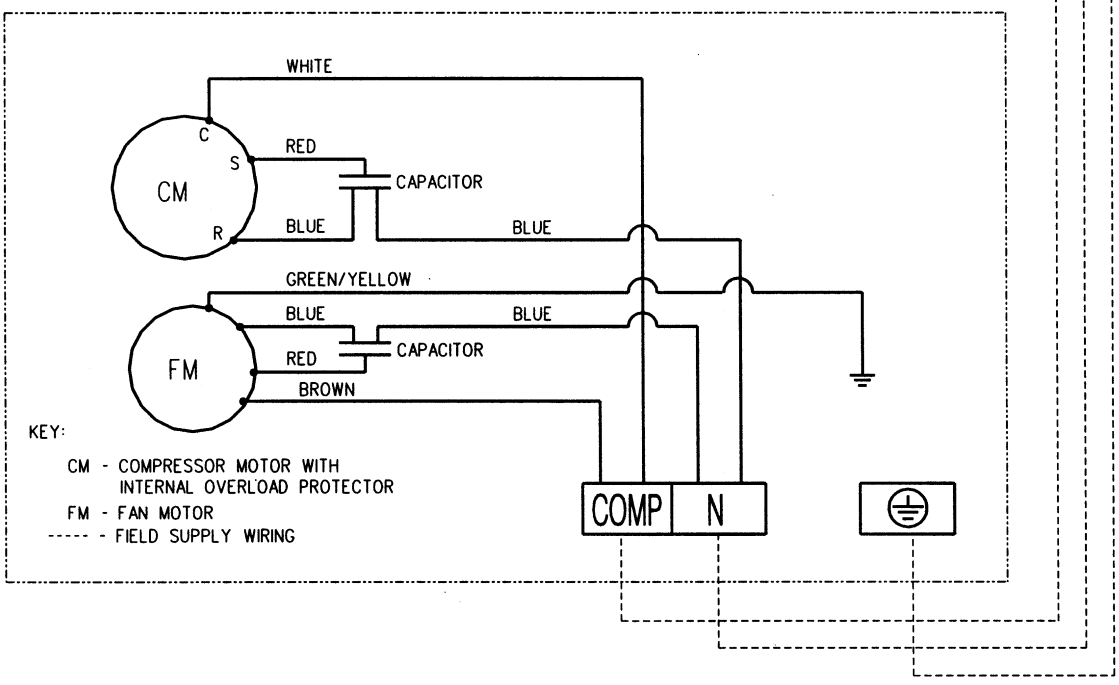


OUTDOOR UNIT
MODEL : ALC/A4LC 40/50CR

INDOOR UNIT (COOLING ONLY)
MODEL : ACK 20/25A (UNIVERSAL BOARD)



OUTDOOR UNIT
MODEL : ALC/A4LC 20/25B

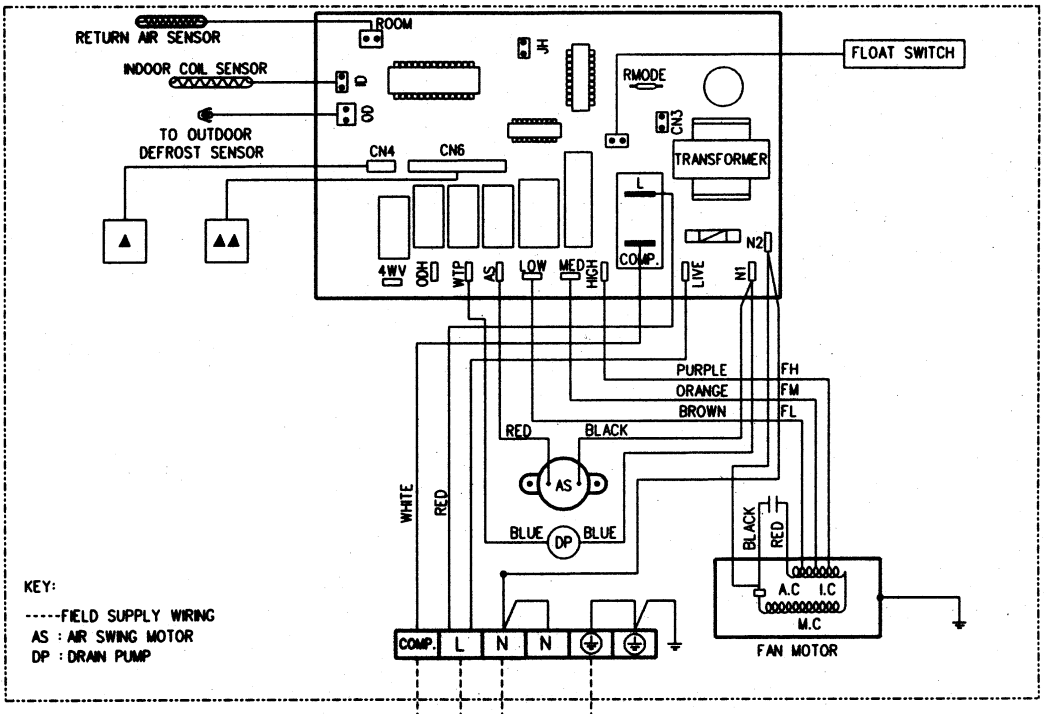


▲ CN4 IS CONNECTED TO WIRED HANDSET

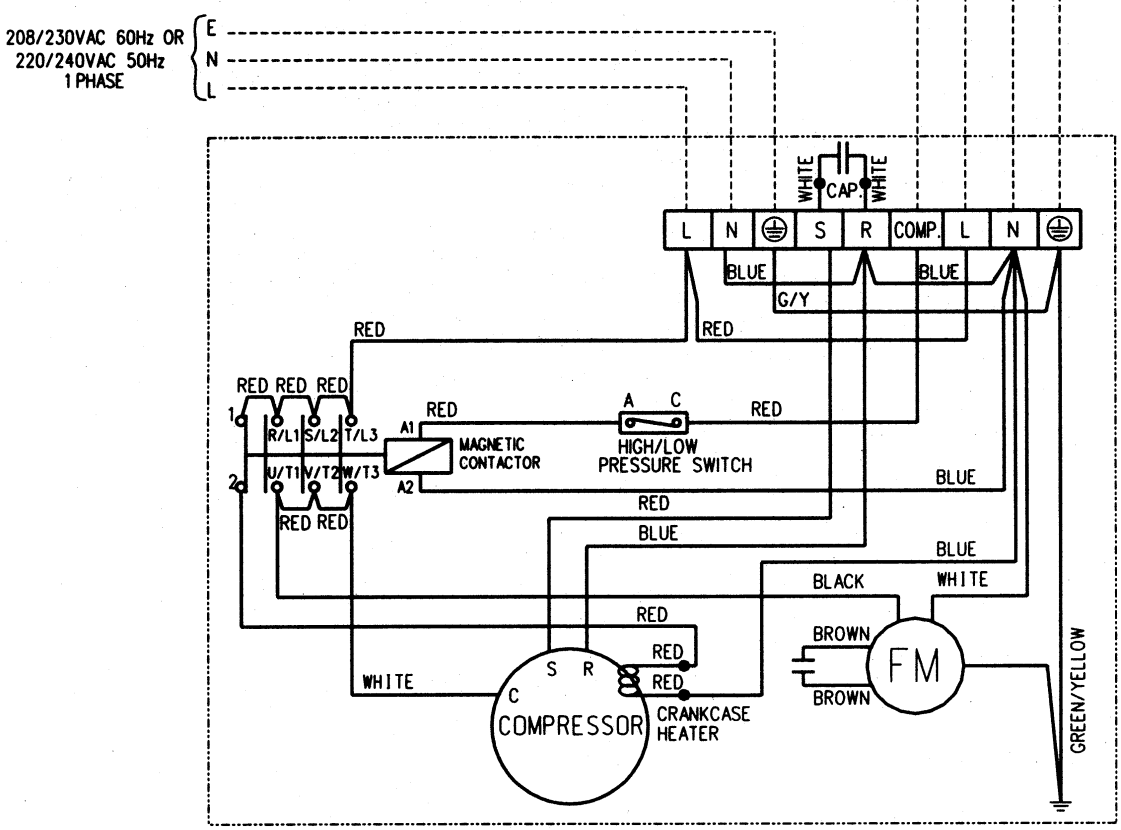
▲▲CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

INDOOR UNIT (COOLING ONLY)
MODEL : ACK 30A (UNIVERSAL BOARD)



OUTDOOR UNIT
MODEL : ALC/A4LC 30C

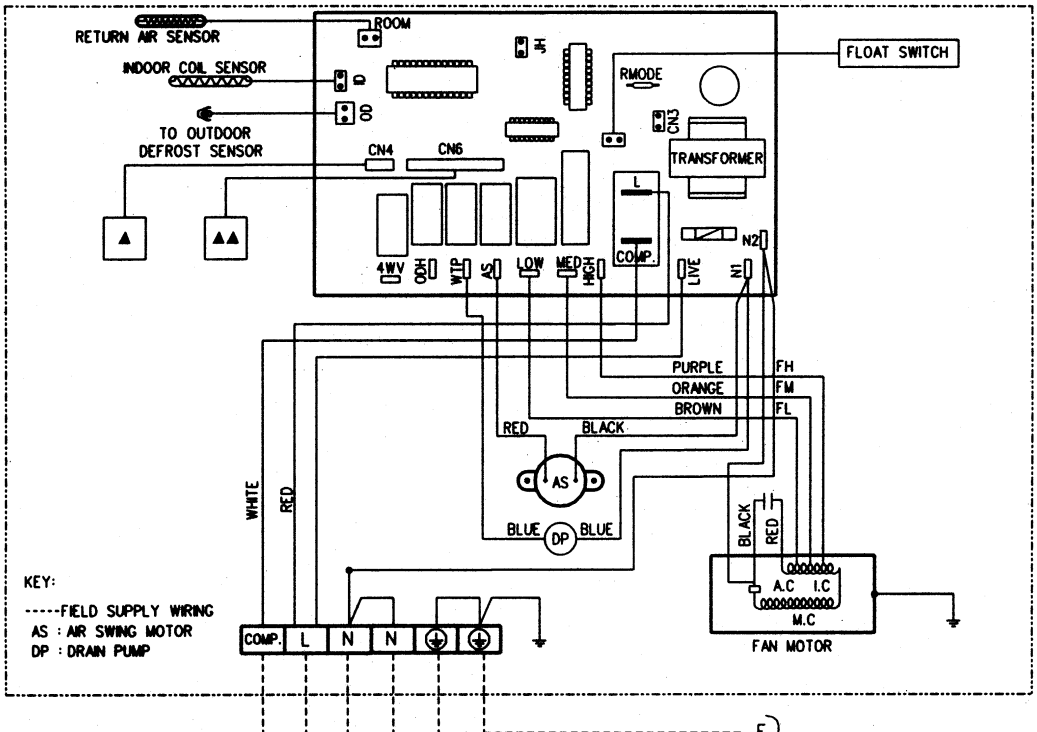


▲ CN4 IS CONNECTED TO WIRED HANDSET

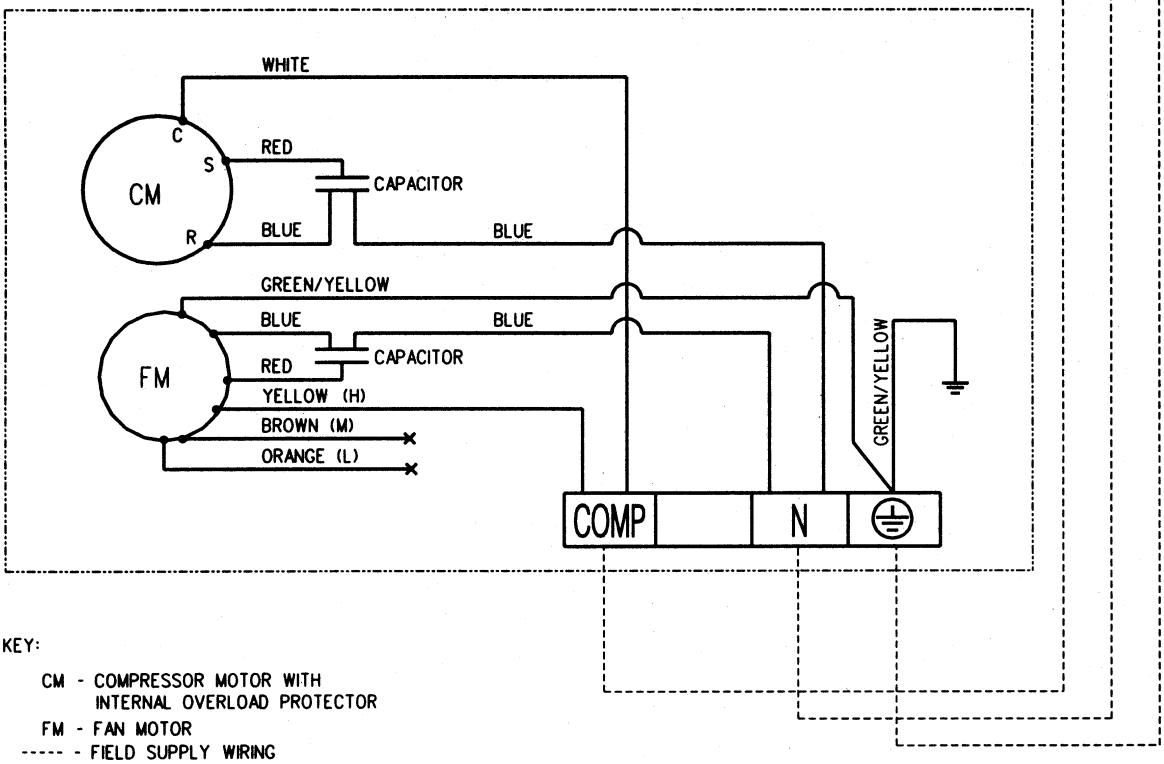
▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK : EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

INDOOR UNIT (COOLING ONLY)
MODEL : ACK 30A (UNIVERSAL BOARD)



OUTDOOR UNIT
MODEL : ALC 30B



KEY:

CM - COMPRESSOR MOTOR WITH
INTERNAL OVERLOAD PROTECTOR

FM - FAN MOTOR

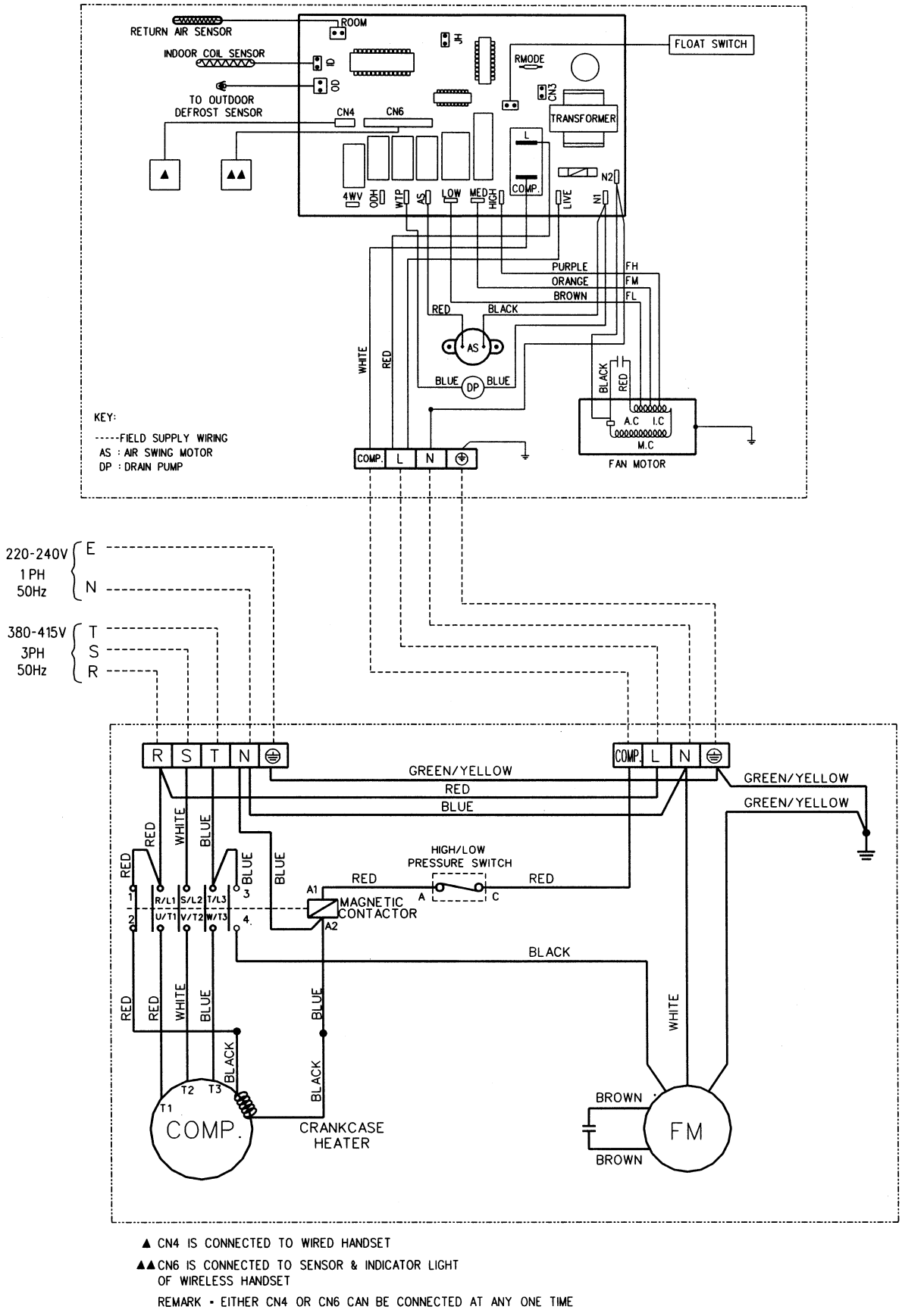
----- - FIELD SUPPLY WIRING

▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT
OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

INDOOR UNIT (COOLING ONLY)
MODEL : ACK 40/50A (UNIVERSAL BOARD)



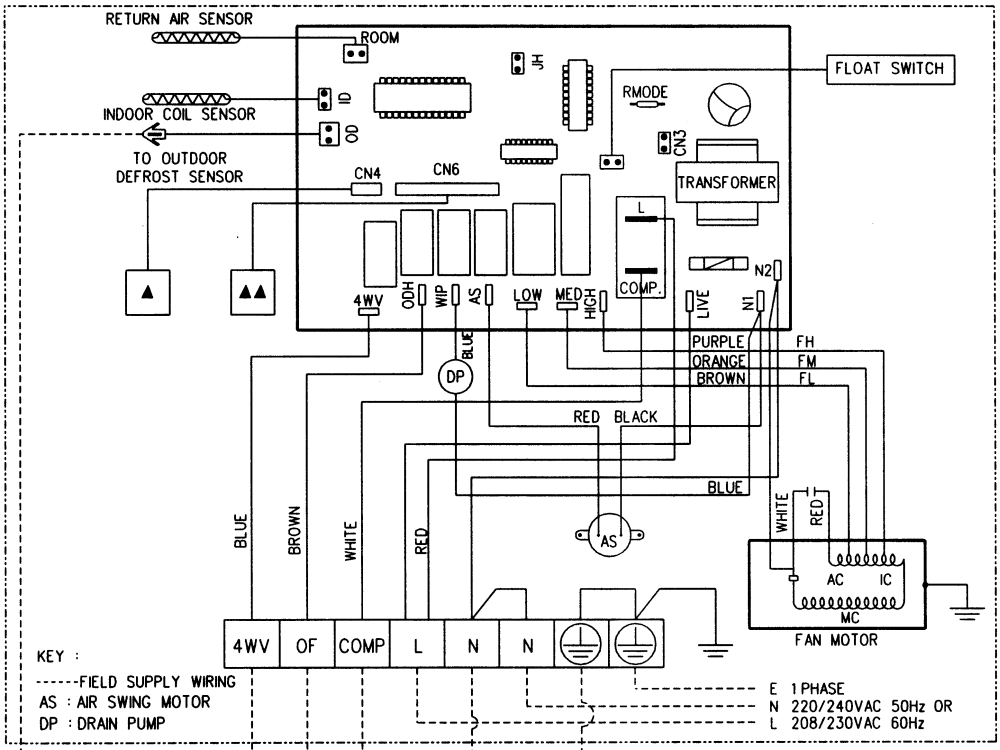
▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

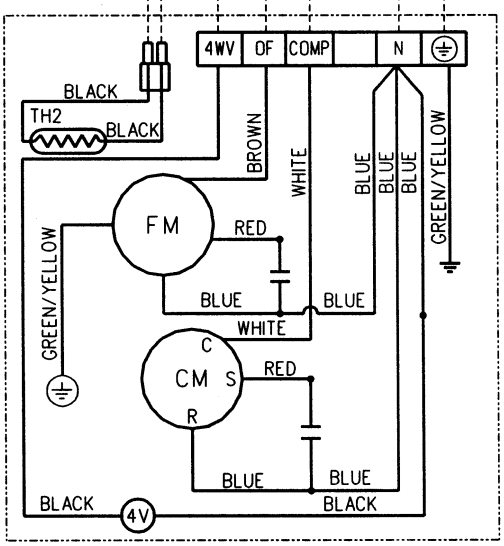
REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

OUTDOOR UNIT
MODEL : ALC/A4LC 40/50C

INDOOR UNIT (HEAT PUMP)
MODEL : ACK 20/25AR (UNIVERSAL BOARD)



OUTDOOR UNIT
MODEL : ALC/A4LC 20/25BR



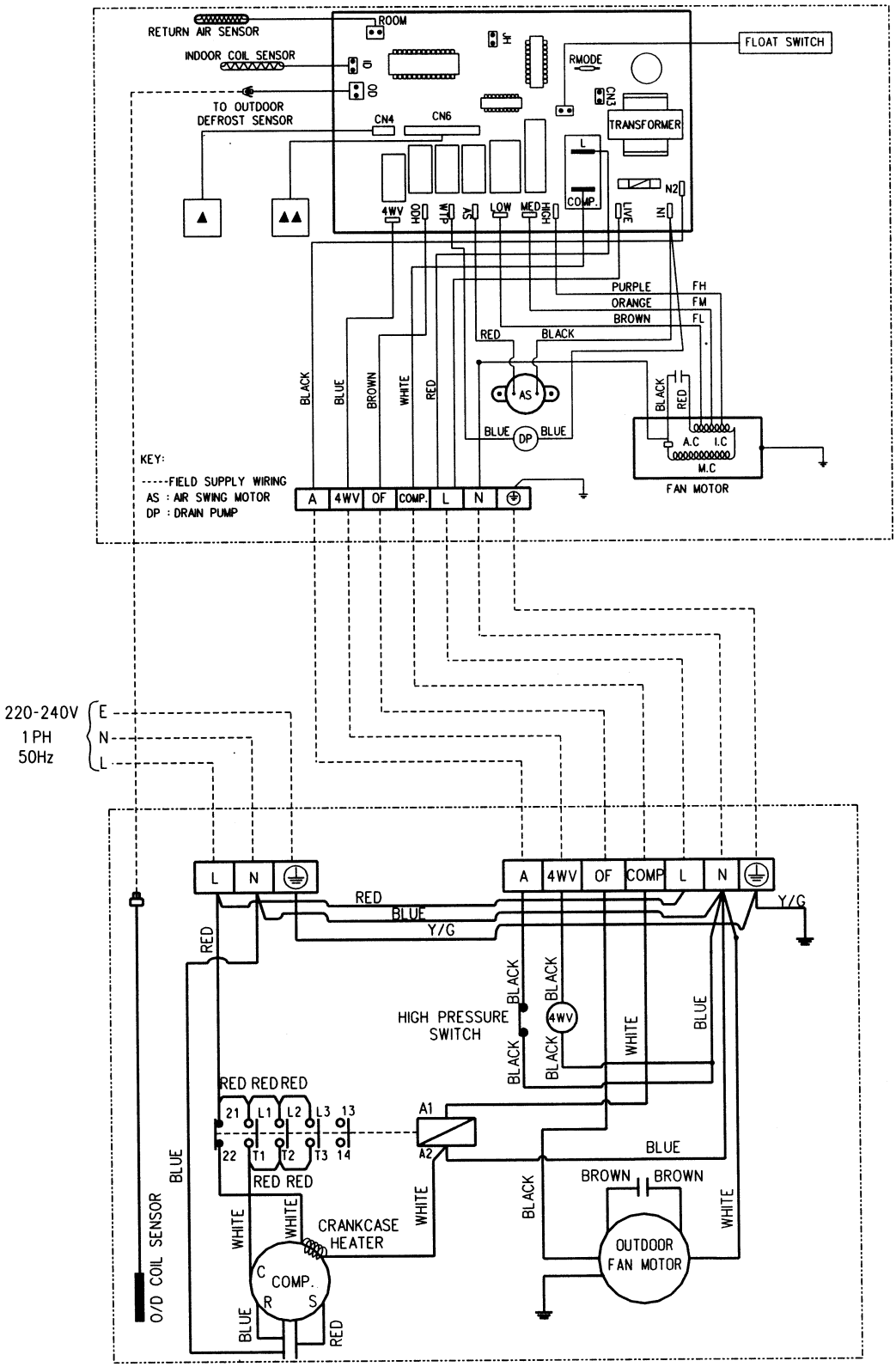
KEY:
- FM - FAN MOTOR
- CM - COMPRESSOR MOTOR
- 4V - 4 WAY VALVE
- TH2- OUTDOOR THERMISTOR
- -------- FIELD SUPPLY WIRING

▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

INDOOR UNIT (HEAT PUMP)
MODEL : ACK 30AR (UNIVERSAL BOARD)



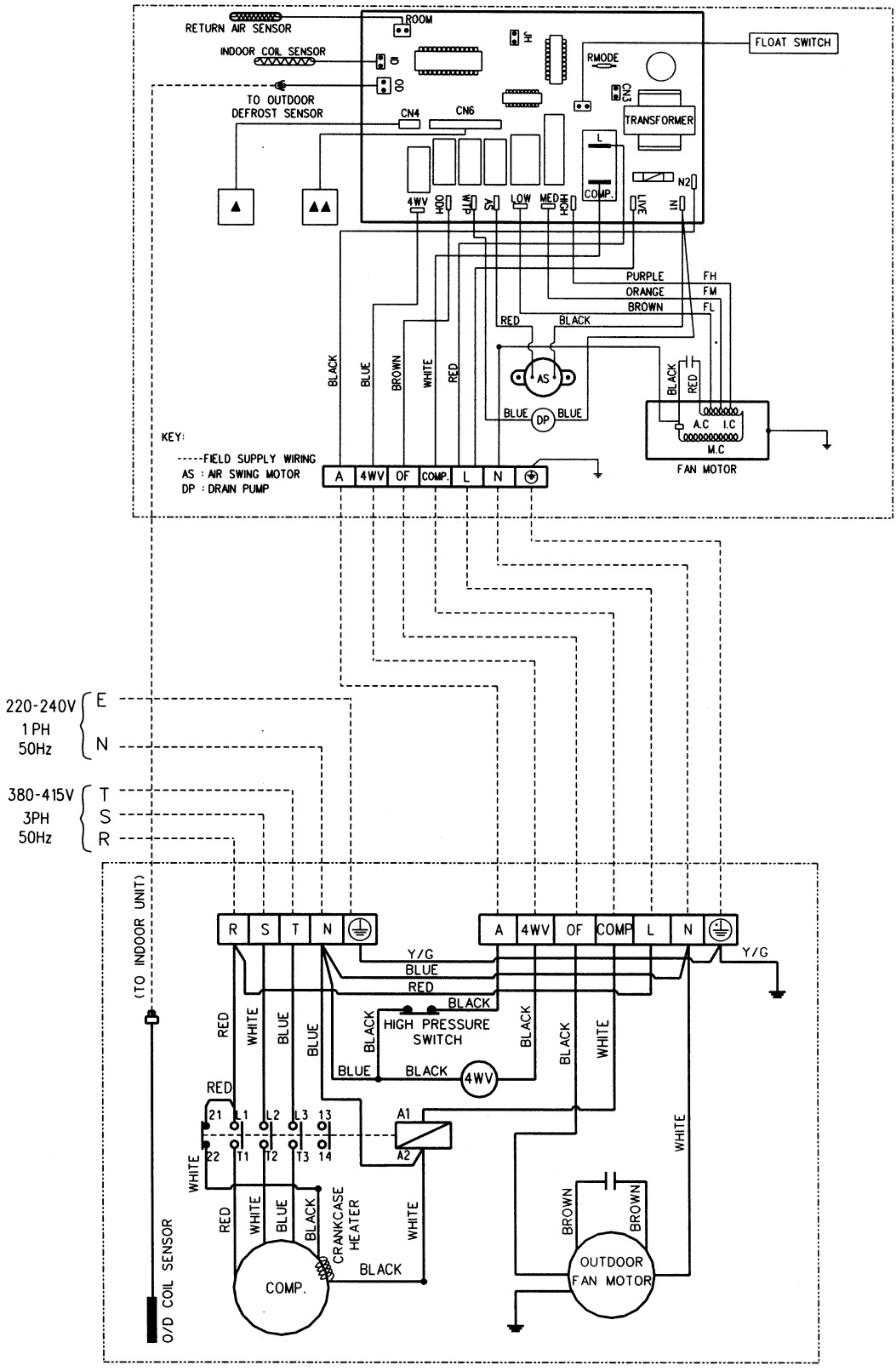
▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

OUTDOOR UNIT
MODEL : ALC/A4LC 30CR

INDOOR UNIT (HEAT PUMP)
MODEL : ACK 40/50AR (UNIVERSAL BOARD)



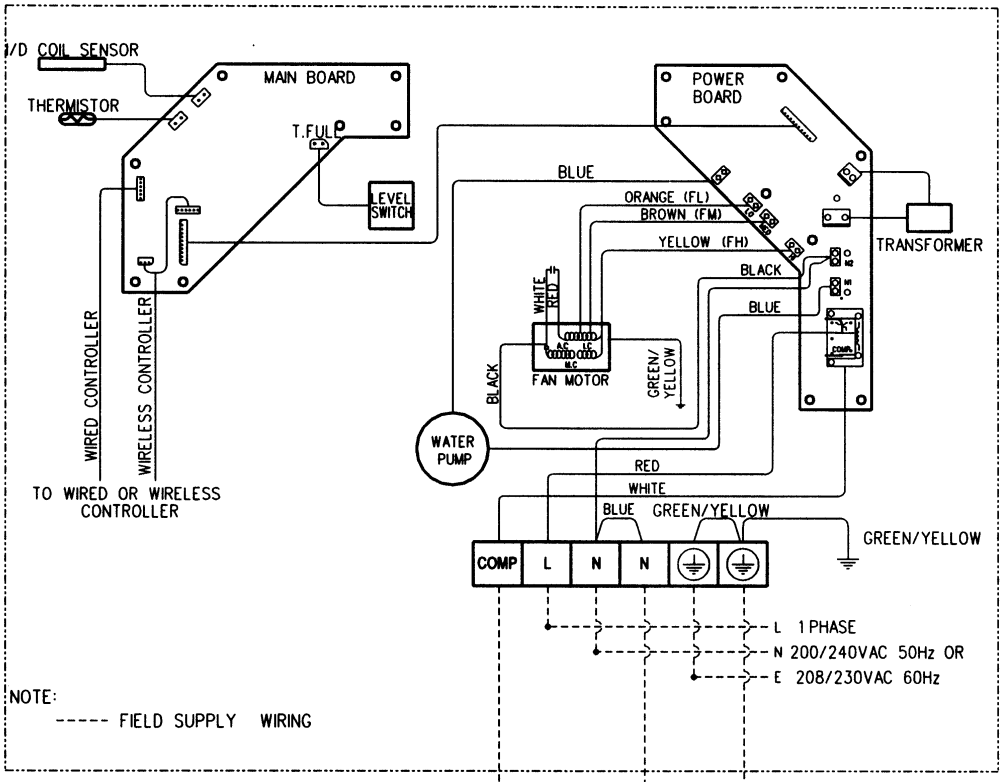
▲ CN4 IS CONNECTED TO WIRED HANDSET

▲▲ CN6 IS CONNECTED TO SENSOR & INDICATOR LIGHT OF WIRELESS HANDSET

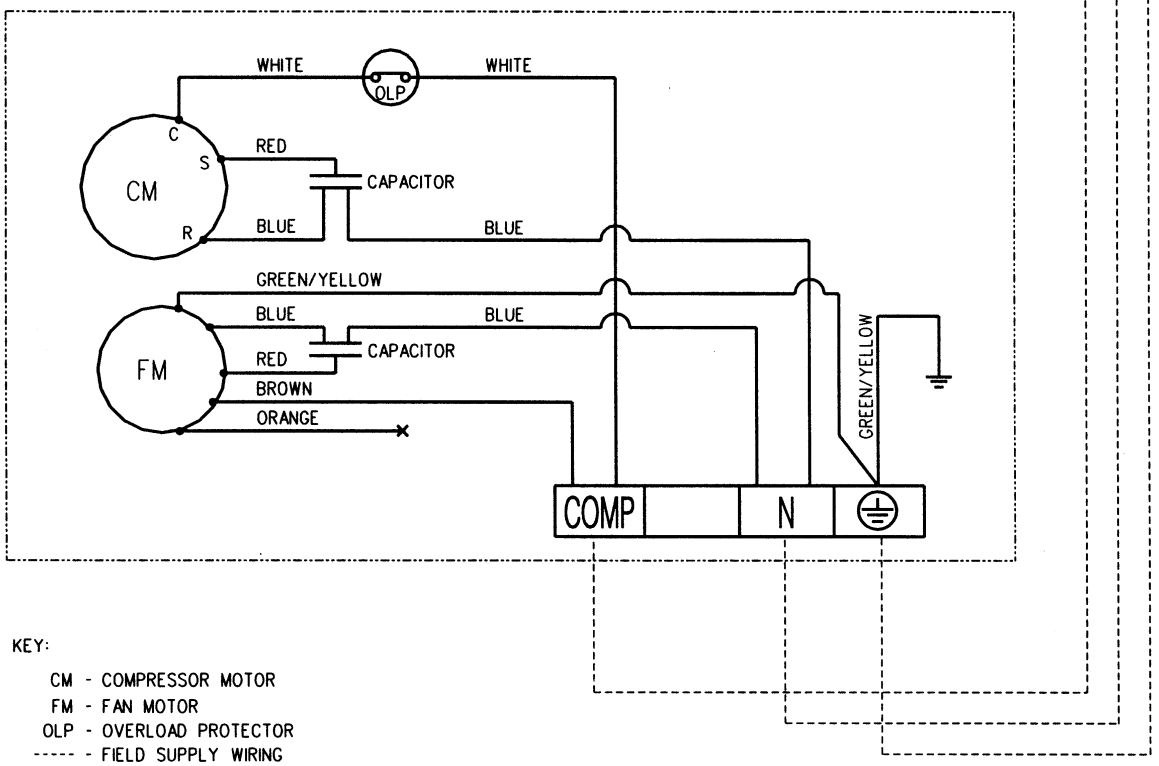
REMARK - EITHER CN4 OR CN6 CAN BE CONNECTED AT ANY ONE TIME

OUTDOOR UNIT
MODEL : ALC/A4LC 40/50CR

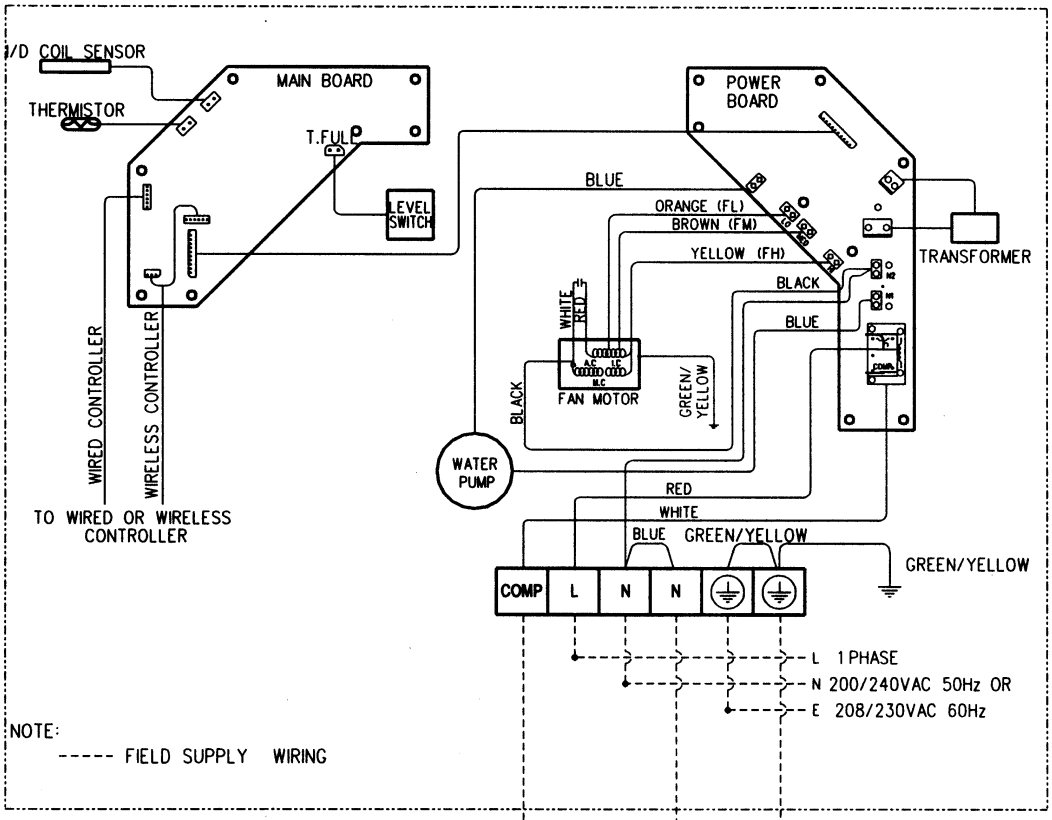
INDOOR UNIT (COOLING ONLY)
MODEL : ACK 15B (UNIVERSAL BOARD)



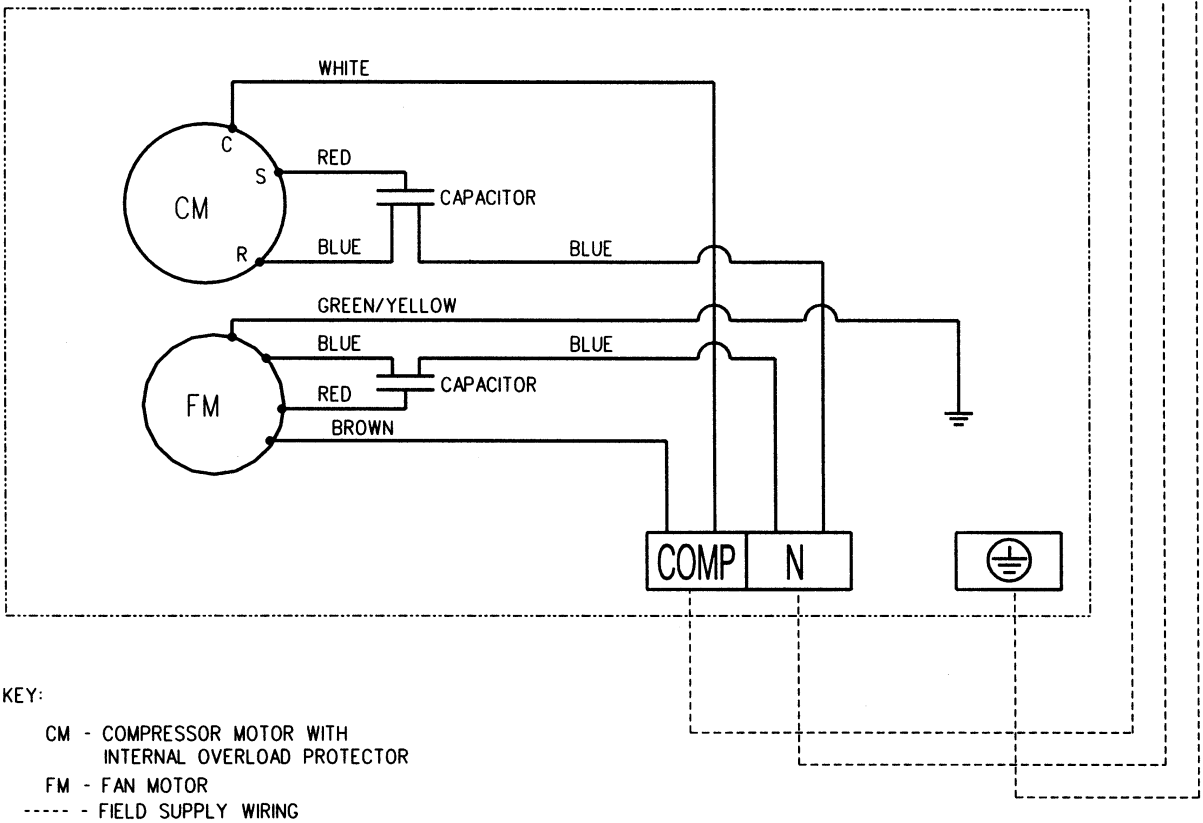
OUTDOOR UNIT
MODEL : ALC15B



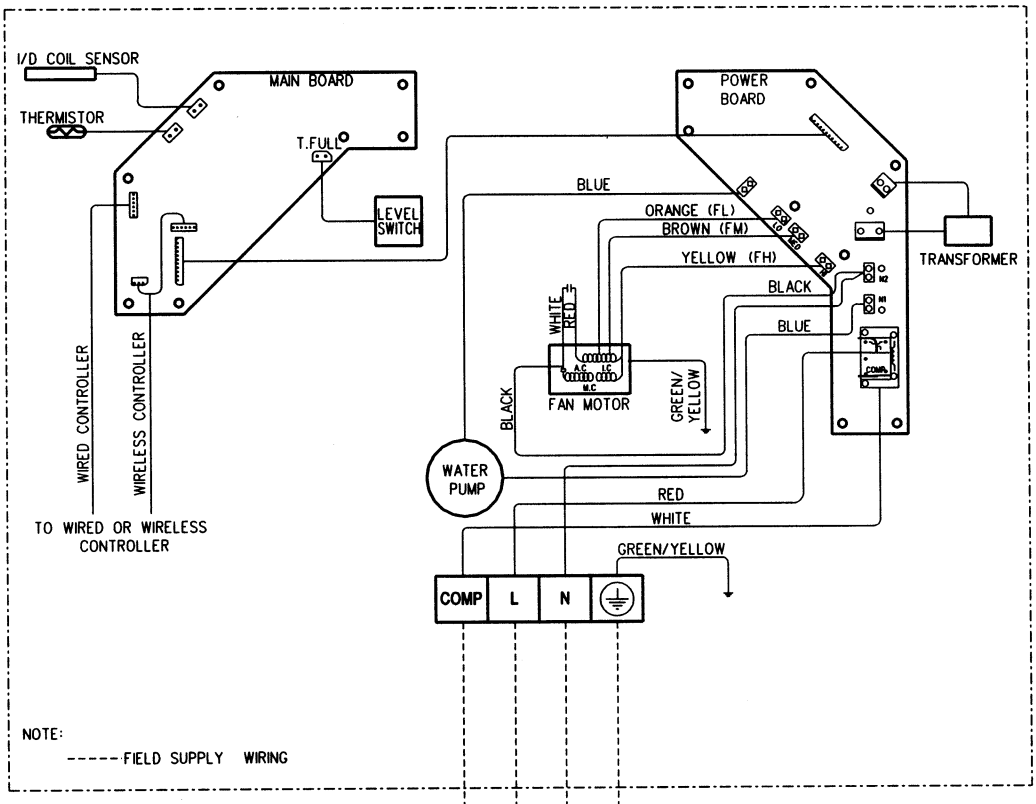
INDOOR UNIT (COOLING ONLY)
MODEL : ACK 20/25B (UNIVERSAL BOARD)



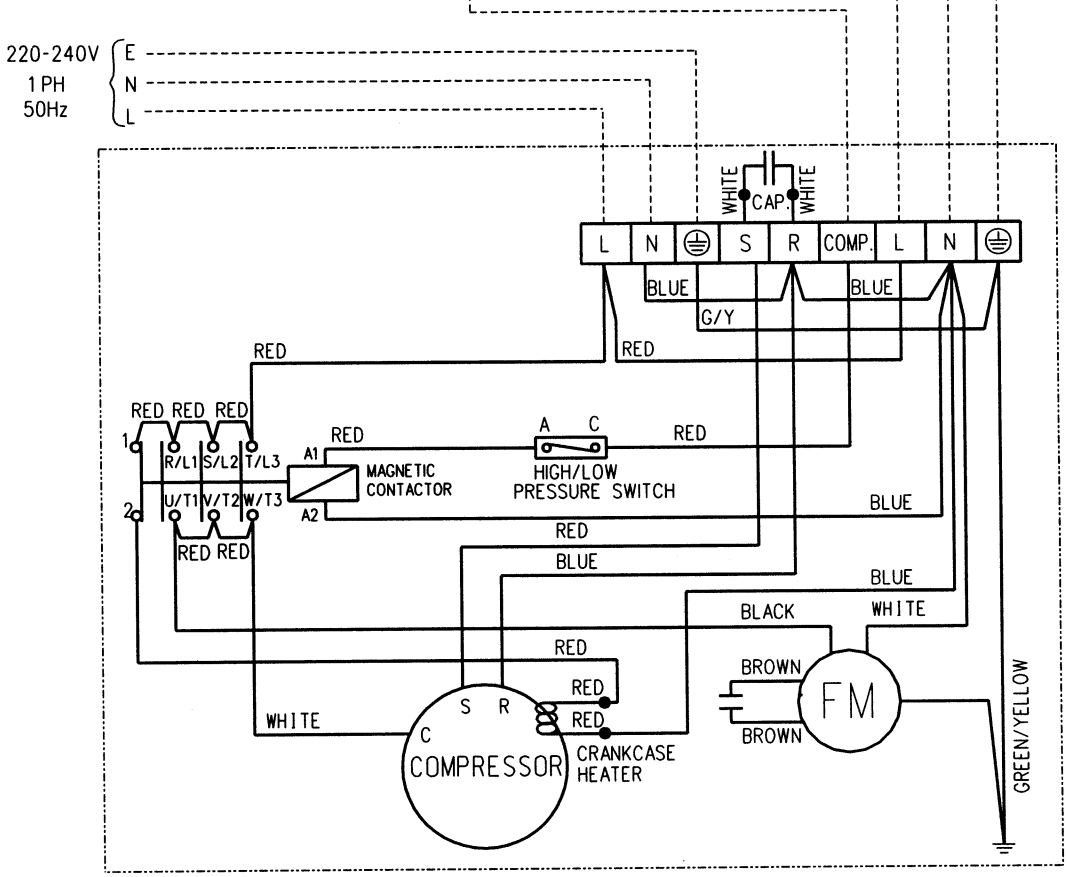
OUTDOOR UNIT
MODEL : ALC20/25B



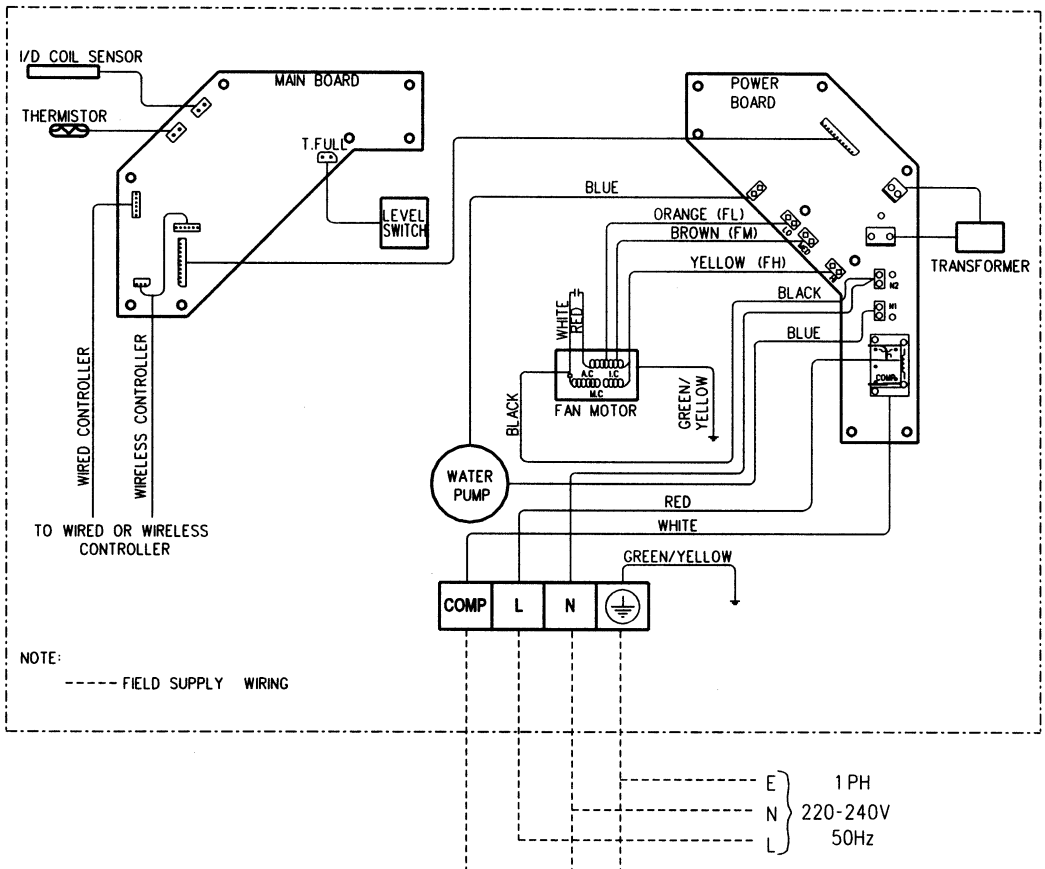
INDOOR UNIT (COOLING ONLY)
MODEL : ACK 30B (UNIVERSAL BOARD)



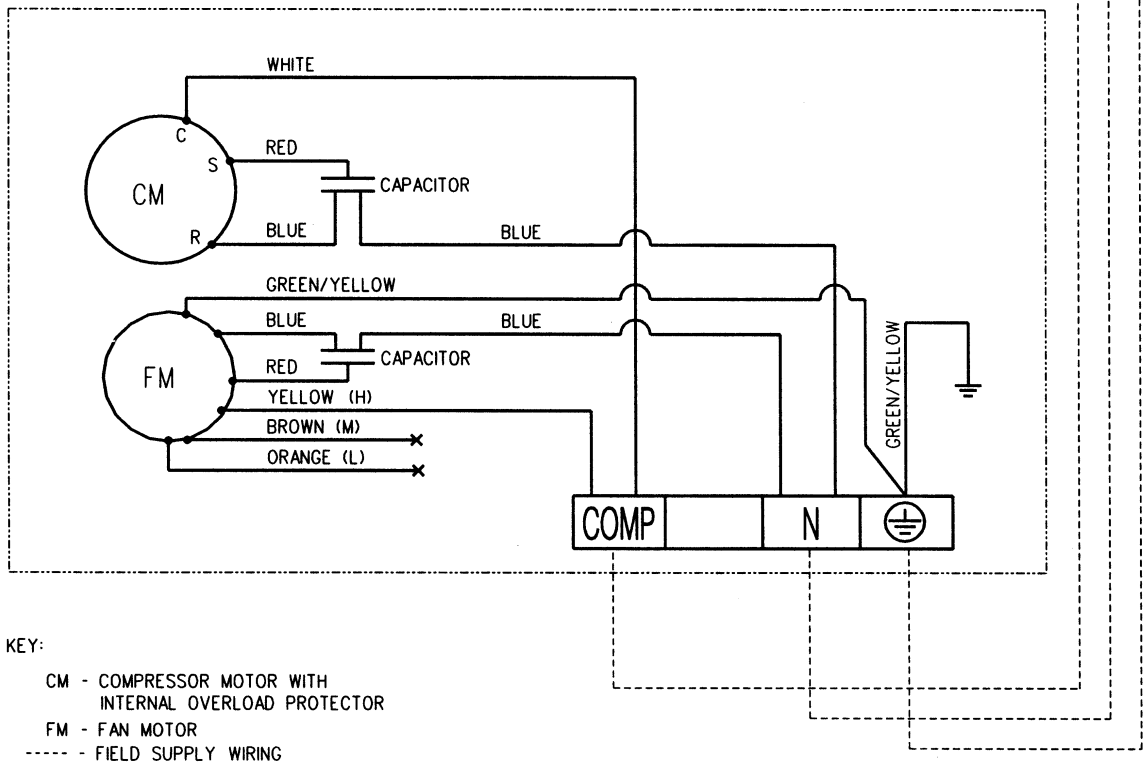
OUTDOOR UNIT
MODEL : ALC30C



INDOOR UNIT (COOLING ONLY)
MODEL : ACK 30B (UNIVERSAL BOARD)



OUTDOOR UNIT
MODEL : ALC 30B



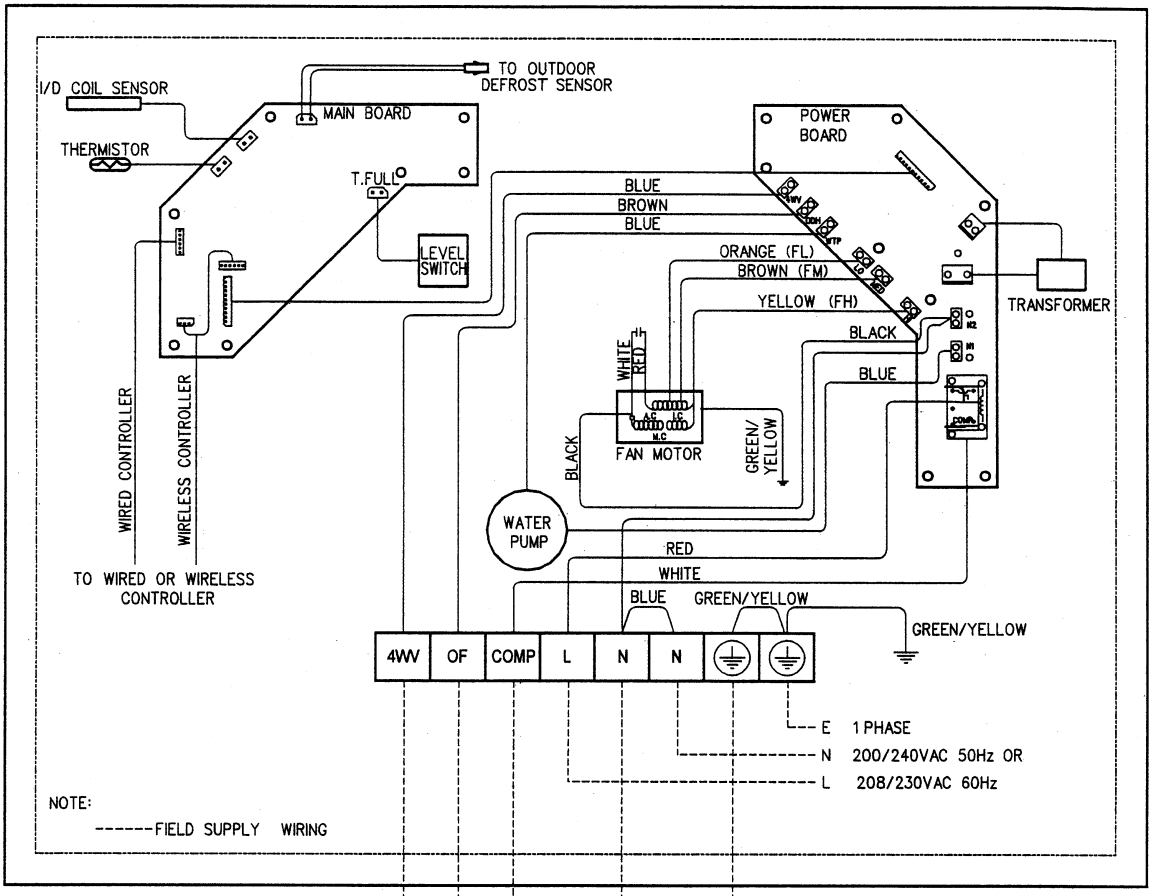
KEY:

CM - COMPRESSOR MOTOR WITH INTERNAL OVERLOAD PROTECTOR

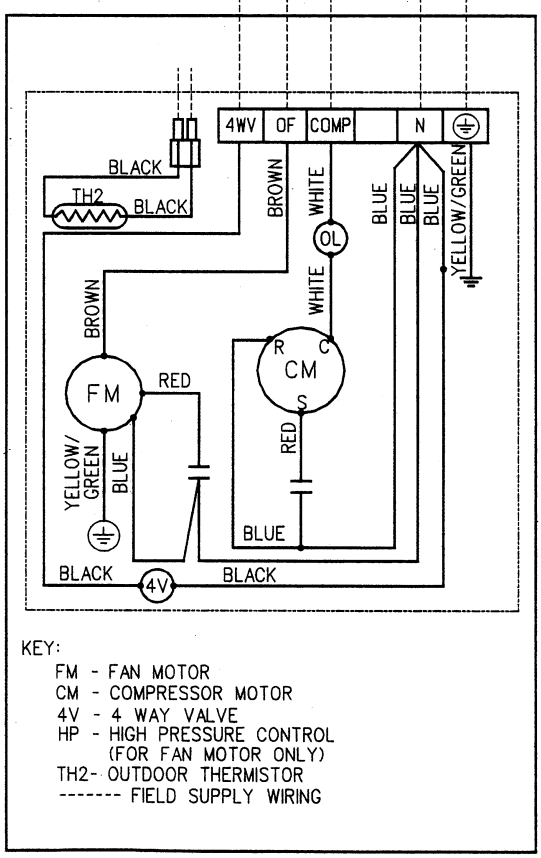
FM - FAN MOTOR

----- - FIELD SUPPLY WIRING

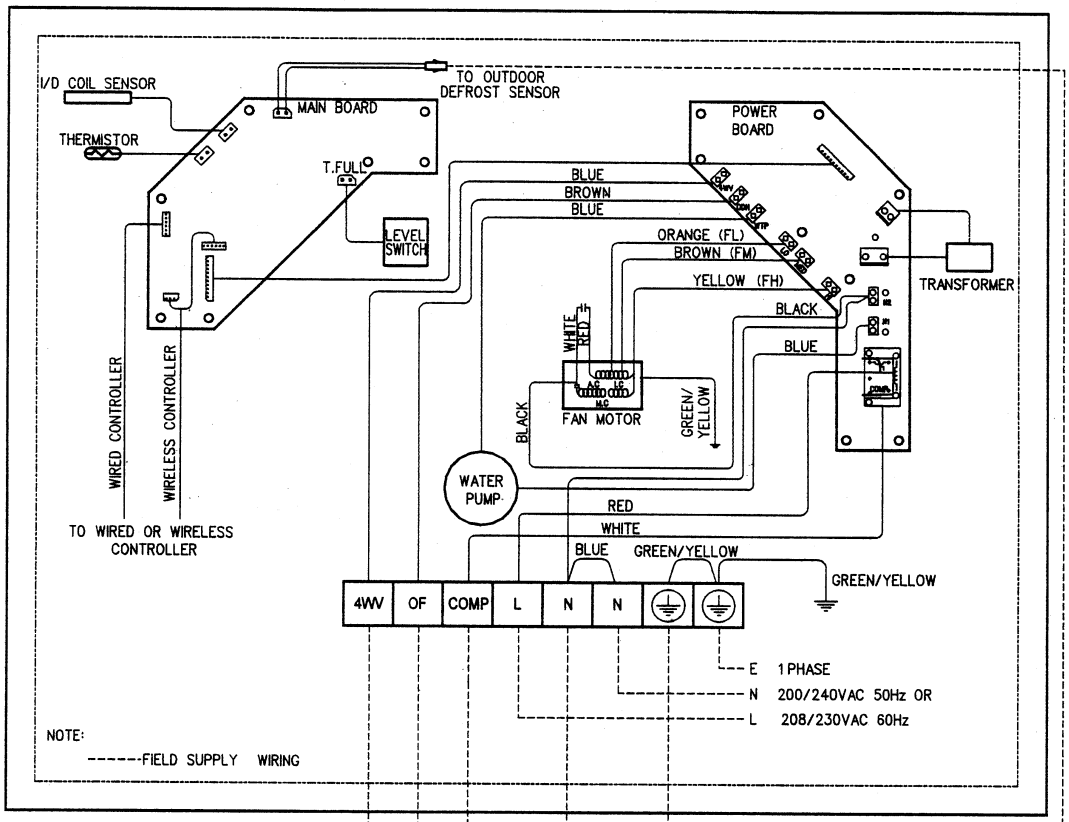
INDOOR UNIT (HEAT PUMP)
MODEL : ACK 15BR (UNIVERSAL BOARD)



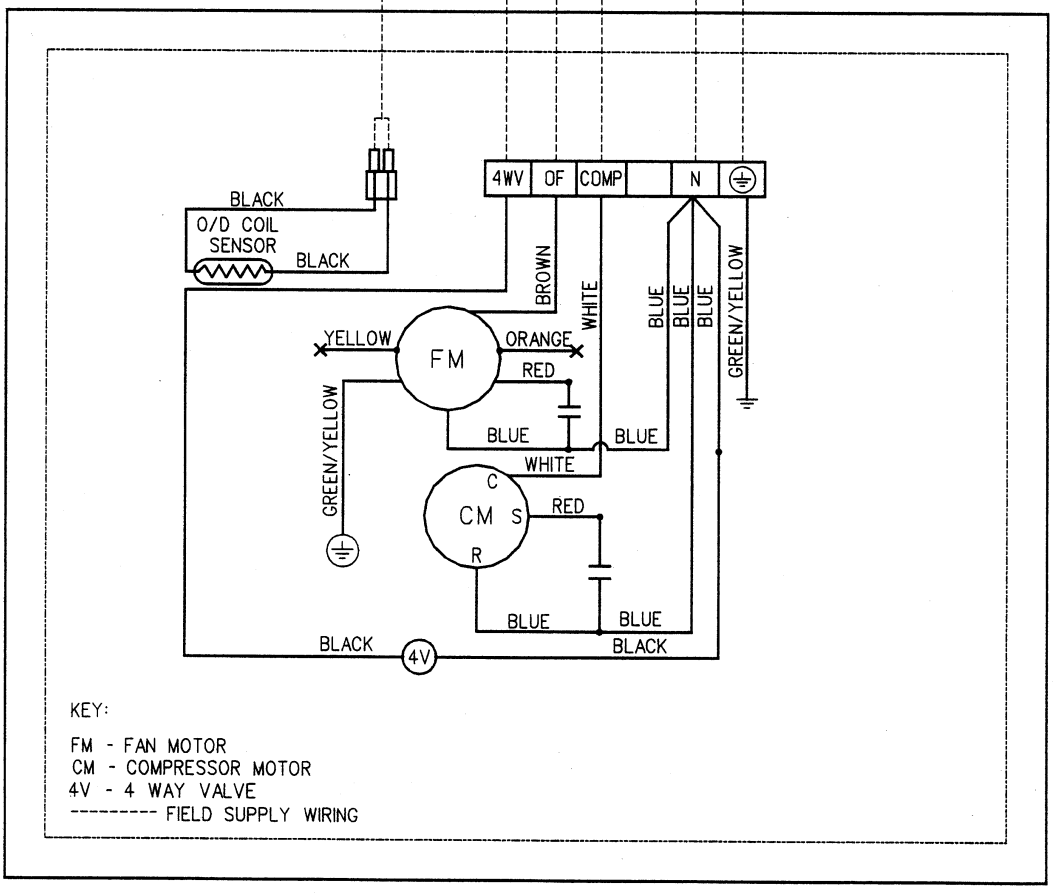
OUTDOOR UNIT
MODEL : ALC 15BR



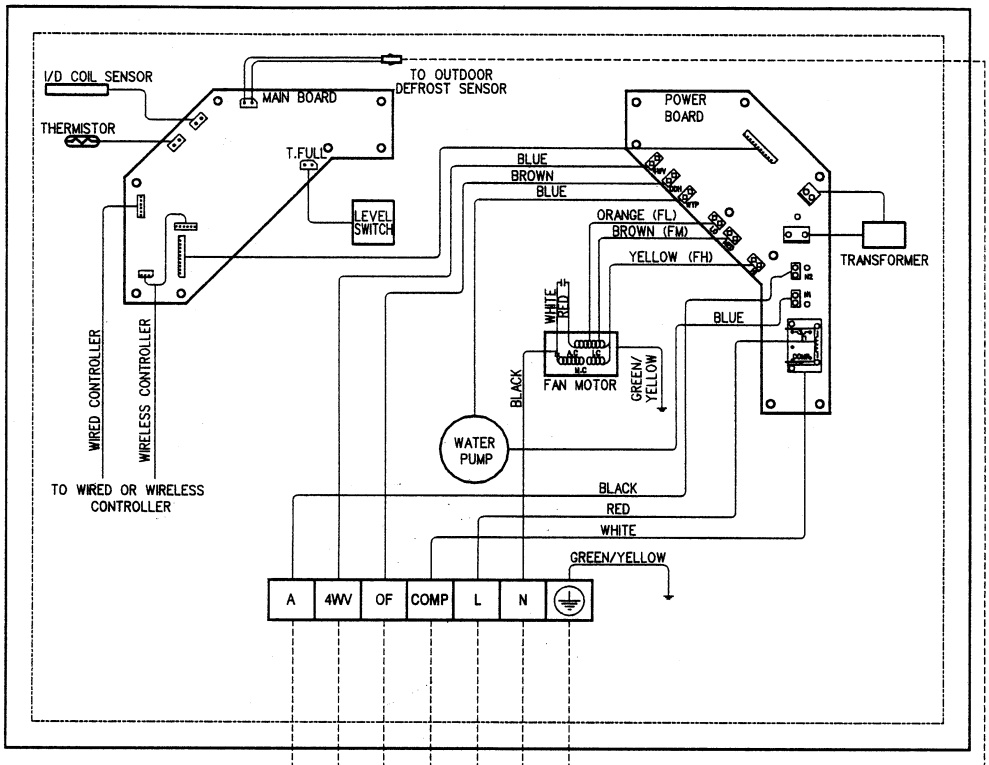
INDOOR UNIT (HEAT PUMP)
MODEL : ACK 20/ 25BR (UNIVERSAL BOARD)



OUTDOOR UNIT
MODEL : ALC 20/ 25BR

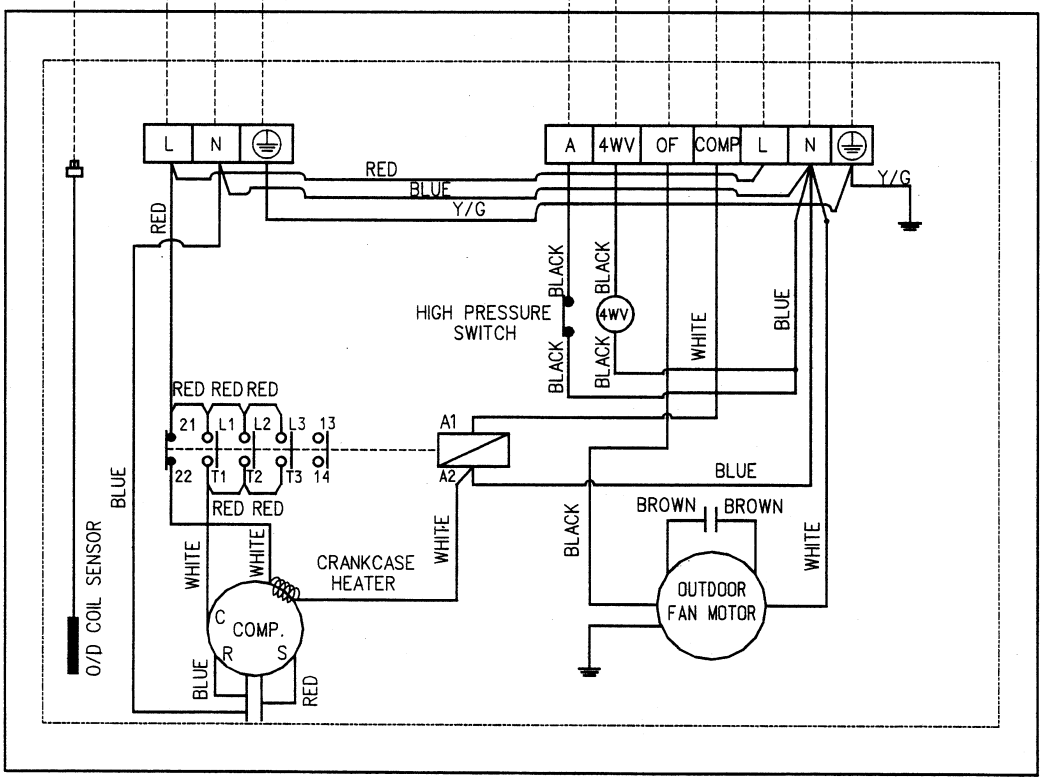


INDOOR UNIT (HEAT PUMP)
MODEL : ACK 30BR (UNIVERSAL BOARD)



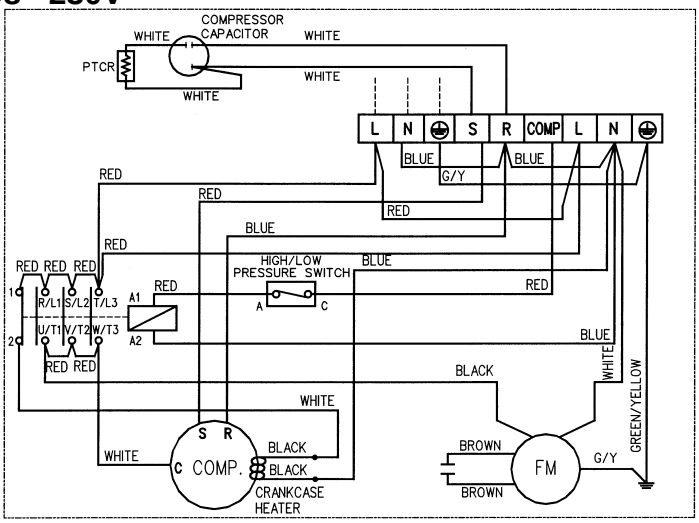
OUTDOOR UNIT
MODEL : ALC 30CR

1 Phase
220 - 240V
50Hz

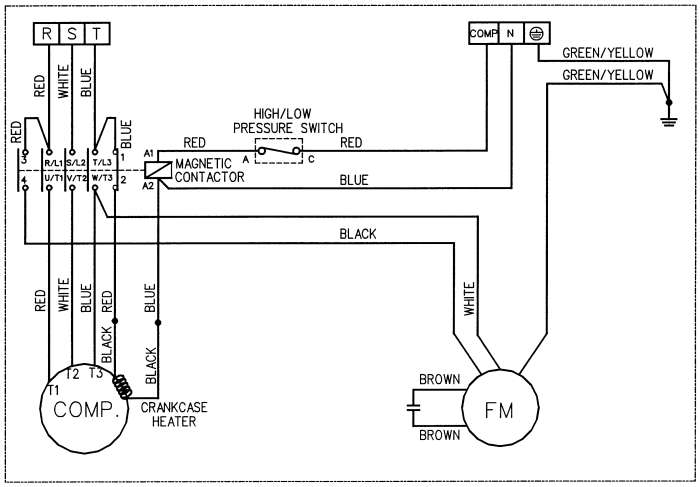


ATTACHMENT
60HZ OUTDOOR UNIT

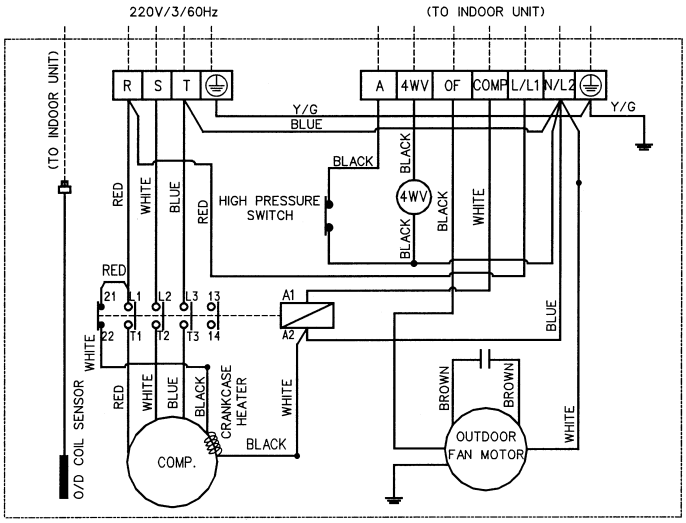
MODEL : ALC 30C (COOLING ONLY)
60HZ / 1 PHASE / 208 ~230V



MODEL : ALC 40/50C (COOLING ONLY)
60HZ / 3 PHASE / 200 ~230V

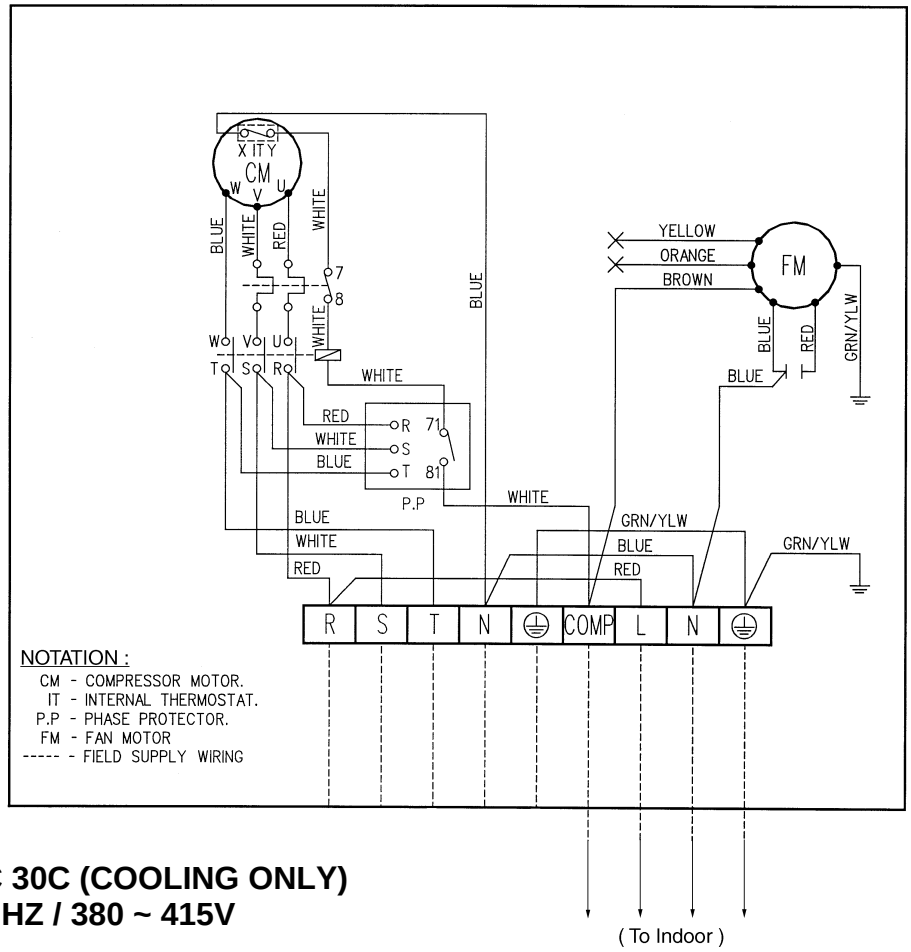


MODEL : ALC 40/50CR (COOLING ONLY)
60HZ / 3 PHASE / 200 ~230V

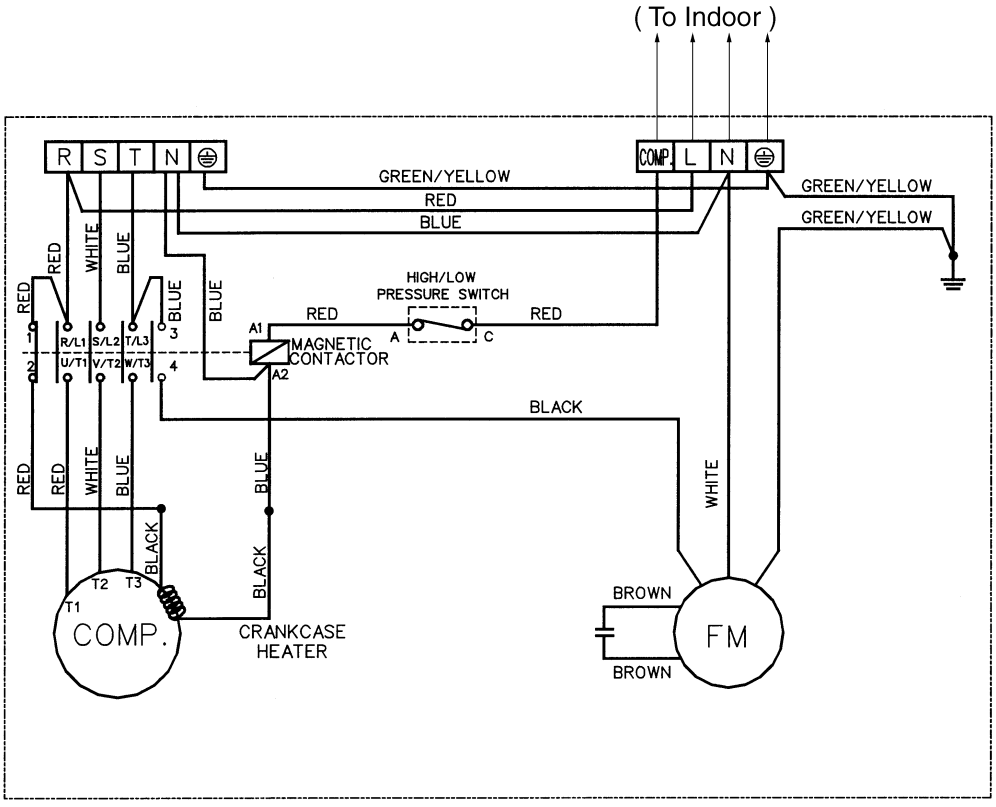


3 PHASE FOR 2 & 3 HP OUTDOOR UNIT

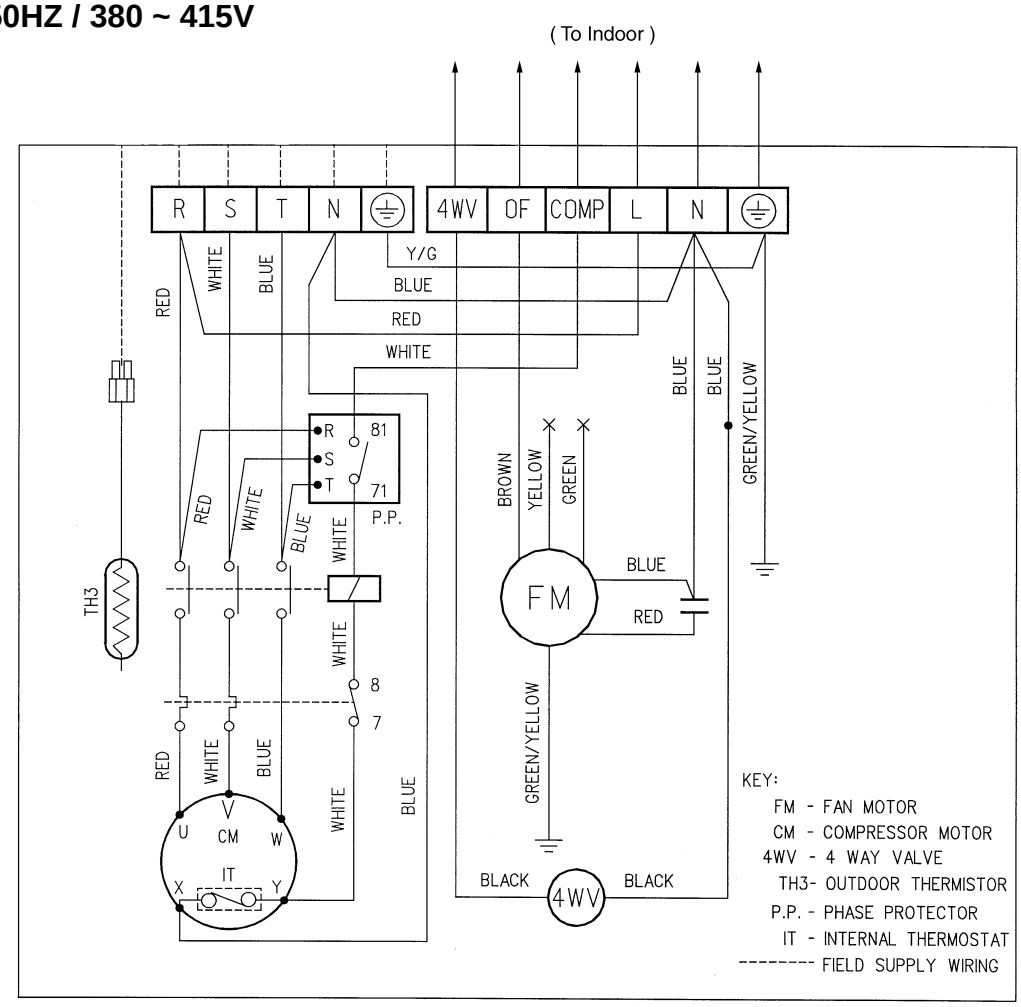
MODEL : ALC 20/25B (COOLING ONLY)
3 PHASE / 50 HZ / 380 ~ 415V



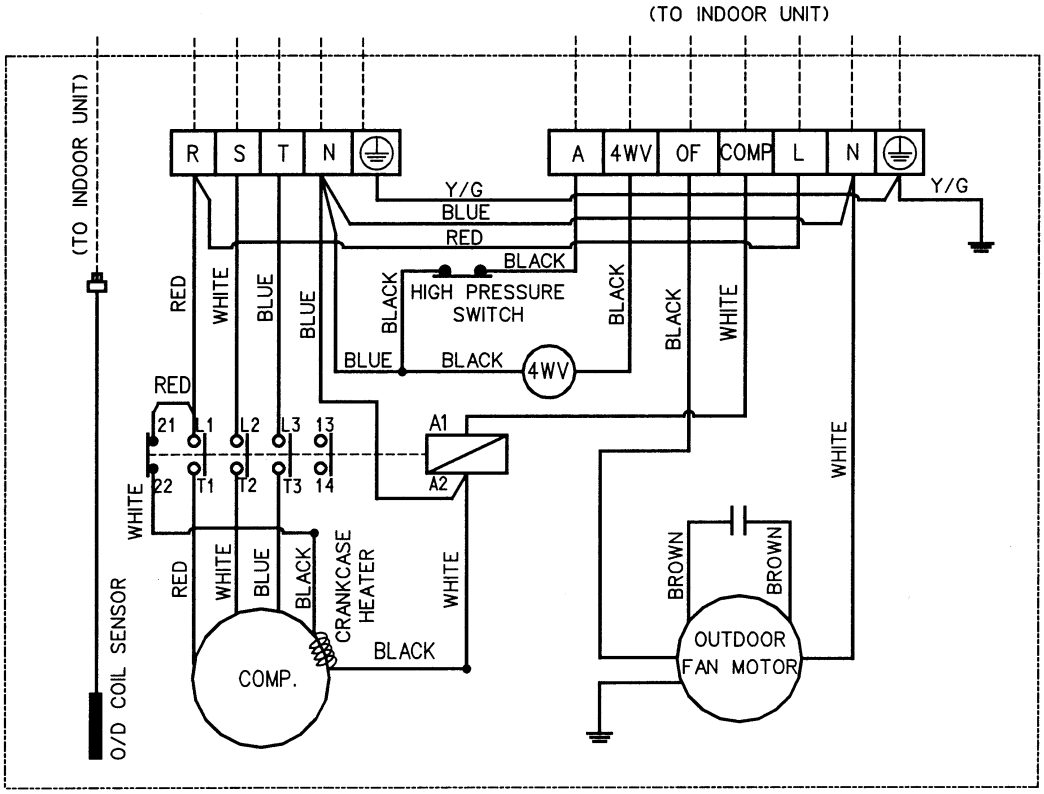
MODEL : ALC 30C (COOLING ONLY)
3 PHASE / 50 HZ / 380 ~ 415V



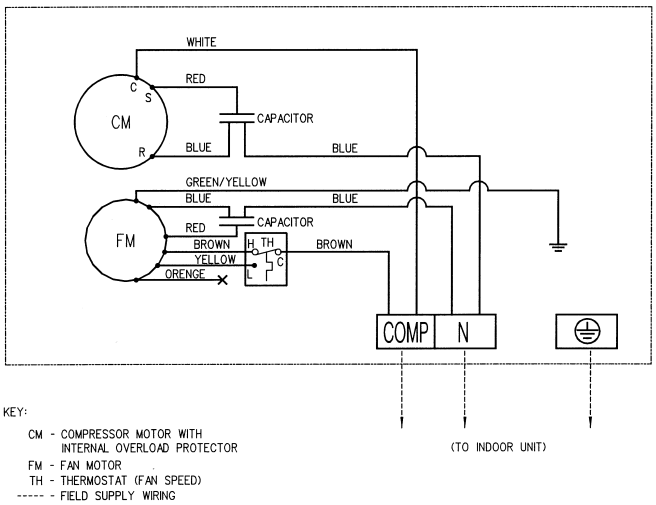
MODEL : ALC 20/25BR (HEAT PUMP)
3 PHASE / 50HZ / 380 ~ 415V



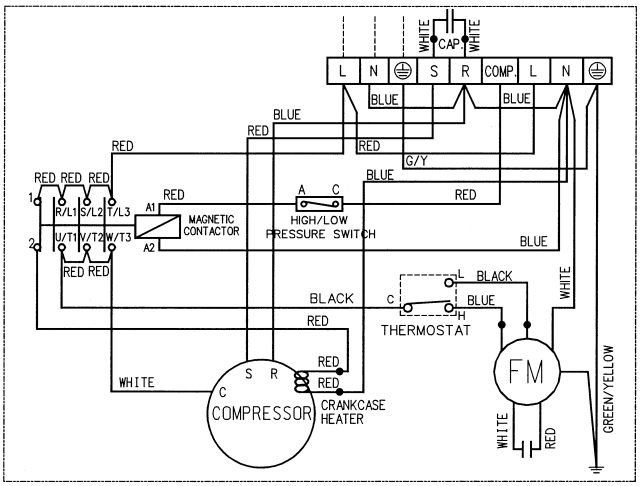
MODEL : ALC 30CR (HEAT PUMP)
3 PHASE / 50HZ / 380 ~ 415V



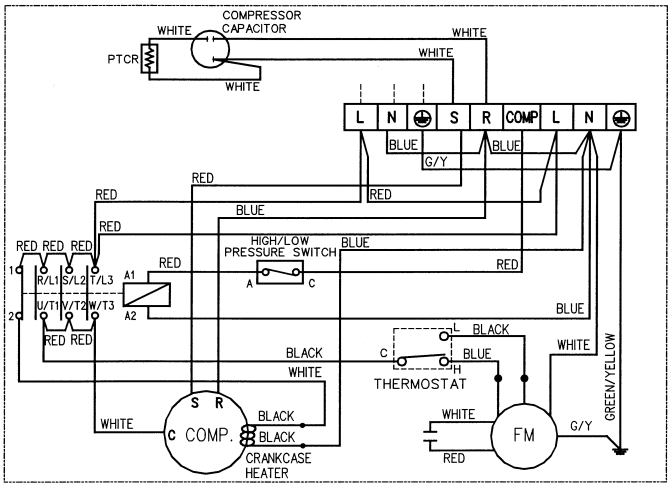
HIGH AMBIENT UNIT
OUTDOOR UNIT
MODEL : ALC 20/25B (COOLING ONLY)
50HZ / 1 PHASE / 220 – 240V, 60HZ / 1 PHASE / 208 – 230V



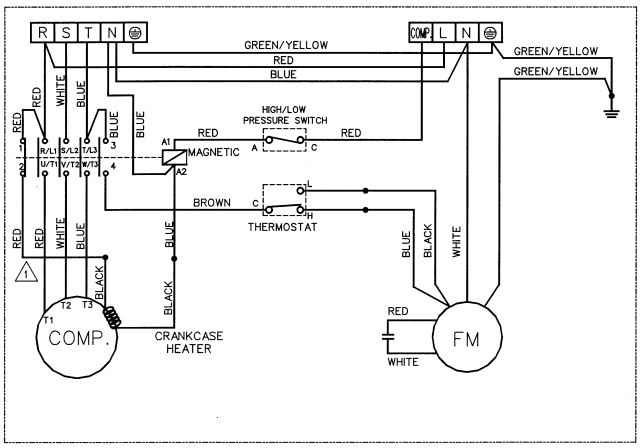
OUTDOOR UNIT
MODEL : ALC 30C (COOLING ONLY)
50HZ / 1 PHASE / 220 – 240V,



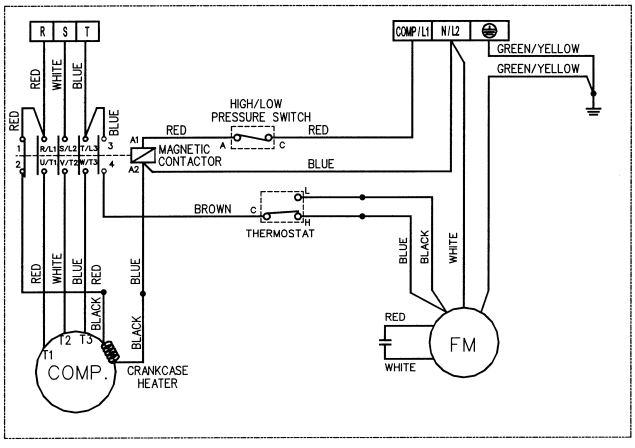
60HZ / 1 PHASE / 208 – 230V



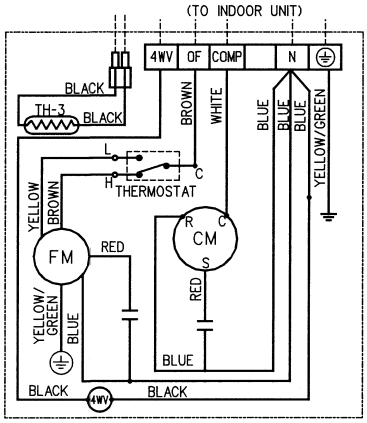
OUTDOOR UNIT
MODEL : ALC 40/50C (COOLING ONLY)
50HZ / 3 PHASE / 380 – 415V,



60HZ / 3 PHASE / 200 – 230V

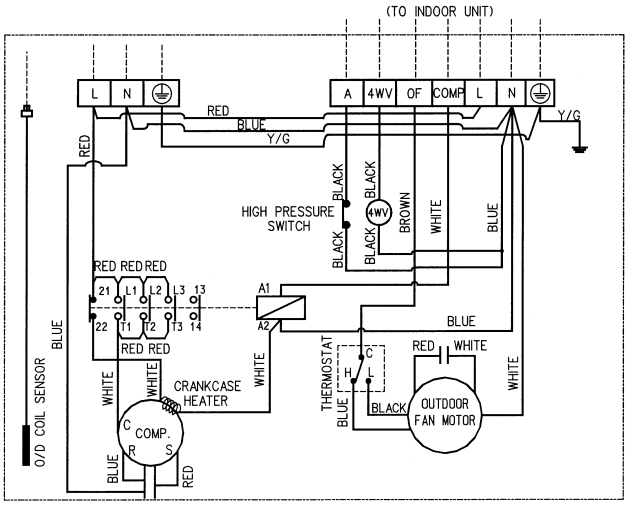


OUTDOOR UNIT
MODEL : ALC 20/25BR (HEAT PUMP)
50HZ / 1 PHASE / 220 – 240V

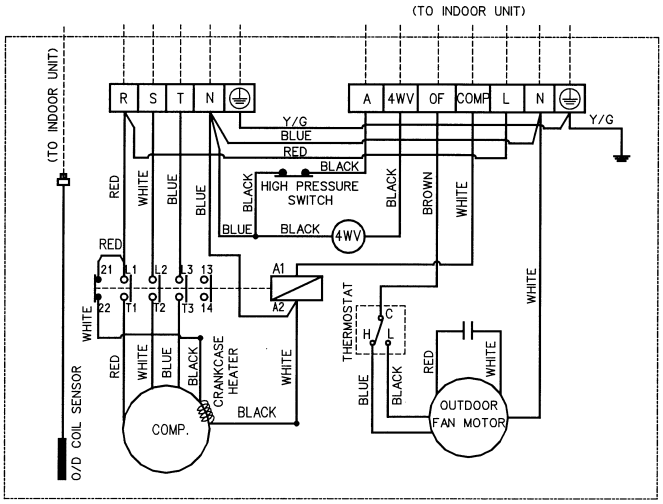


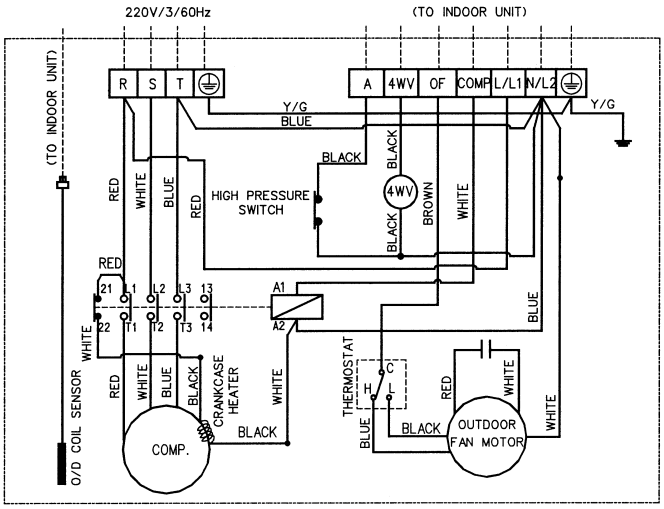
KEY:
FM - FAN MOTOR
CM - COMPRESSOR MOTOR
4WV - 4 WAY VALVE
TH3 - OUTDOOR THERMISTOR
------- FIELD SUPPLY WIRING

OUTDOOR UNIT
MODEL : ALC 30CR
50HZ / 1 PHASE / 220 – 240V, 60 HZ / 1 PHASE / 220V



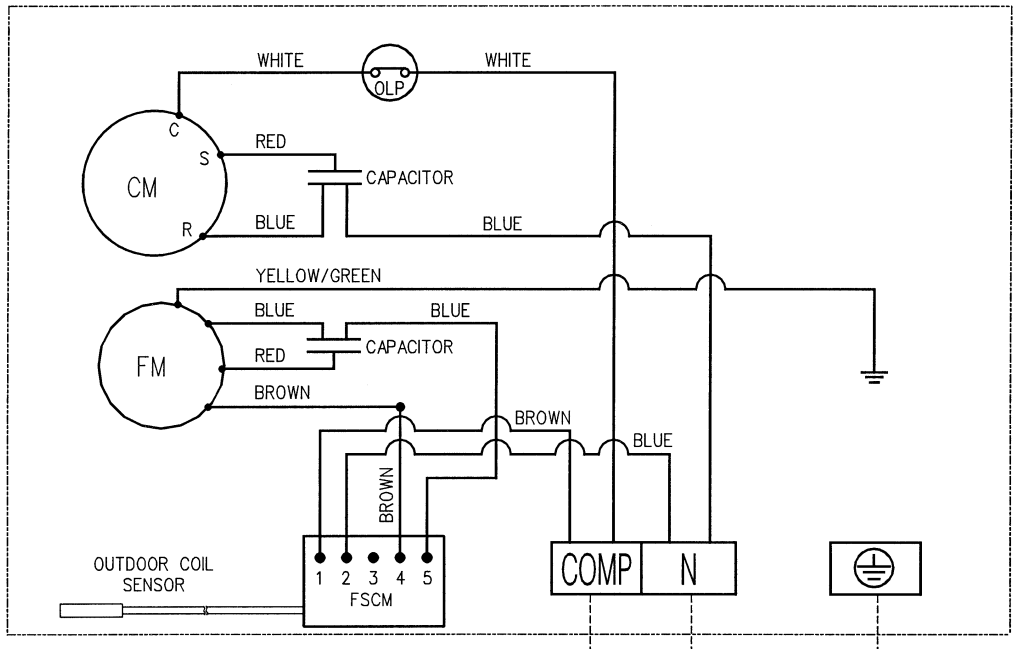
OUTDOOR UNIT
MODEL : ALC 40/50CR
50HZ / 3 PHASE / 380 – 415V, **60HZ / 3 PHASE / 220V**





LOW AMBIENT UNIT (OPTIONAL)

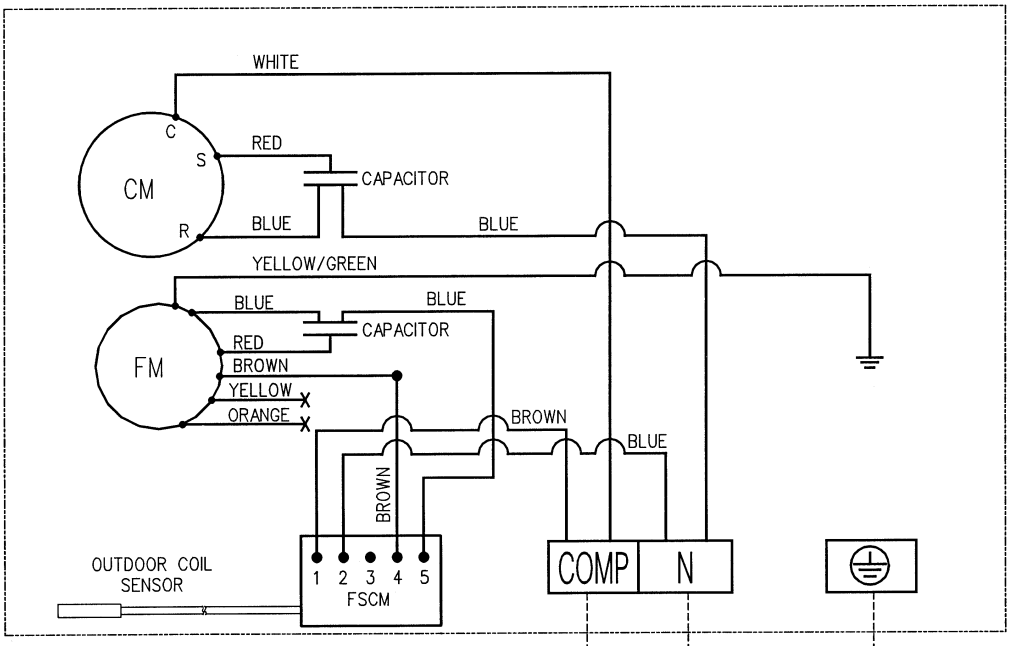
OUTDOOR UNIT
MODEL : ALC 10B / 15B (50HZ)



KEY:
CM - COMPRESSOR MOTOR
FM - FAN MOTOR
OLP - OVERLOAD PROTECTOR
FSCM - FAN SPEED CONTROL MODULE
----- - FIELD SUPPLY WIRING

(TO INDOOR UNIT)

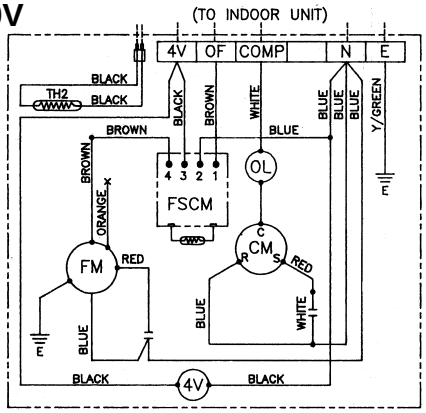
OUTDOOR UNIT
MODEL : ALC 20B / 25B (50HZ)



KEY:
CM - COMPRESSOR MOTOR
FM - FAN MOTOR
OLP - OVERLOAD PROTECTOR
FSCM - FAN SPEED CONTROL MODULE
----- - FIELD SUPPLY WIRING

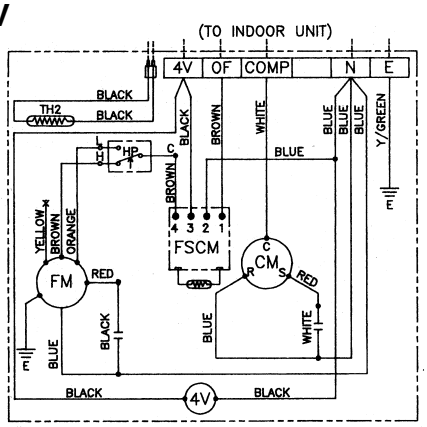
(TO INDOOR UNIT)

LOW AMBIENT UNIT
OUTDOOR UNIT
MODEL : ALC 10/15BR
50HZ / 1 PHASE / 220 – 240V



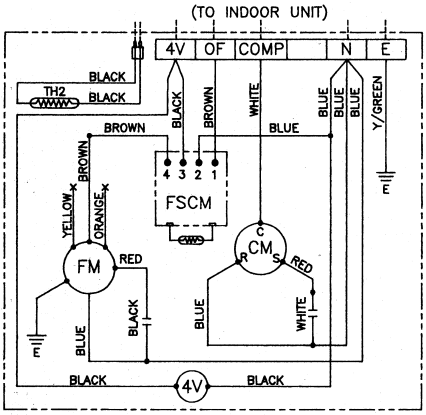
KEY:
FM – FAN MOTOR
CM – COMPRESSOR MOTOR
OL – OVER LOAD
4V – 4 WAY VALVE
TH2 – OUTDOOR THERMISTOR
FSCM – FAN SPEED CONTROL MODULE
------ – FIELD SUPPLY WIRING

OUTDOOR UNIT
MODEL : ALC 20BR
50HZ / 1 PHASE / 220 – 240V



KEY:
FM – FAN MOTOR
CM – COMPRESSOR MOTOR
4V – 4 WAY VALVE
TH2 – OUTDOOR THERMISTOR
HP – HIGH PRESSURE CONTROL (FOR FAN MOTOR ONLY)
FSCM – FAN SPEED CONTROL MODULE
------ – FIELD SUPPLY WIRING

OUTDOOR UNIT
MODEL : ALC 25BR
50HZ / 1 PHASE / 220 – 240V



KEY:
FM – FAN MOTOR
CM – COMPRESSOR MOTOR
4V – 4 WAY VALVE
TH2 – OUTDOOR THERMISTOR
FSCM – FAN SPEED CONTROL MODULE
------ – FIELD SUPPLY WIRING

8. SPECIAL PRECAUTIONS FOR R407C

Special precautions when dealing with refrigerant R407C unit

1) WHAT IS NEW REFRIGERANT R407C?

R407C is a zeotropic refrigerant mixture which has zero ozone depletion potential and thus conformed to the Montreal Protocol regulation. It requires Polyol ester oil (POE) oil for its compressor's lubricant. Its refrigerant capacity and performance are about the same as the refrigerant R22.

2) COMPONENTS

Mixture weight composition R32(23%), R125(25%), R134a(52%)

3) CHARACTERISTIC

- R407C liquid and vapor components have different compositions when the fluid evaporates or condenses. Hence, when leak occurs and only vapor leaks out, the composition of the refrigerant mixture left in the system will change and subsequently affect the system performance. If just additional refrigerant is added to leaked system, system performance will drop. It is recommended that the system should be evacuated thoroughly before recharging with R407C.
- When refrigerant R407C is used, the composition will differ depending on whether it is in gaseous or liquid phase. Hence when charging R407C, ensure that only liquid is being withdrawn from the cylinder or can. This is to make certain that only original composition of R407C is being charged into the system.
- POE oil is used as lubricant for R407C compressor, which is different from the mineral oil used for R22 compressor. Extra precaution must be taken not to expose the R407C system too long to moist air.

4) CHECK LIST BEFORE INSTALLATION/SERVICING

- Tubing
  Refrigerant R407C is more easily affected by dust of moisture compared with R22, make sure to temporarily cover the ends of the tubing prior to installation
- Compressor oil
  No additional charge of compressor oil is permitted.
- Refrigerant
  No other refrigerant other that R407C
- Tools
  Tools specifically for R407C only (must not be used for R22 or other refrigerant)
  i) Manifold gauge and charging hose
  ii) Gas leak detector
  iii) Refrigerant cylinder/charging cylinder
  iv) Vacuum pump c/w adapter
  v) Flare tools
  vi) Refrigerant recovery machine

5) HANDLING AND INSTALLATION GUIDELINES

Like R22 system, the handling and installation of R407C system are closely similar. All precautionary measures; such as ensuring no moisture, no dirt or chips in the system, clean brazing using nitrogen, and thorough leak check and vacuuming are equally important requirements. However, due to zeotropic nature of R407C and its hydroscopic POE oil, additional precautions must be taken to ensure optimum and trouble-free system operation.

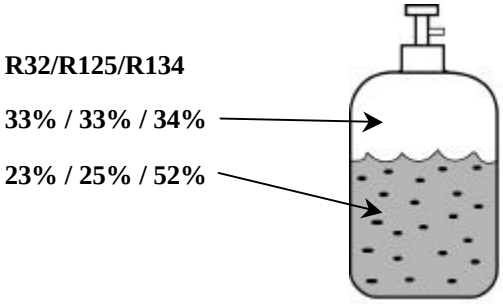
a) Filter-dryer must be installed along the liquid line for all R407C air conditioners. This is to minimise the contamination of moisture and dirt in the refrigerant system. Filter-dryer must be of molecular sieve type. For a heat-pump system, install a two-way flow filter dryer along the liquid line.

b) During installation or servicing, avoid prolong exposure of the internal part of the refrigerant system to moist air. Residual POE oil in the piping and components can absorb moisture from the air.

c) Ensure that the compressor is not expose to open air for more than the recommended time specified by its manufacturer (typically less than 10 minutes). Removed the seal-plugs only when the compressor is about to be brazed.

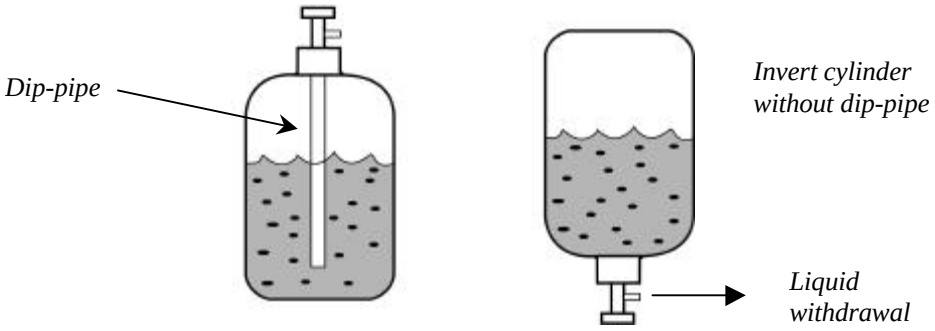
d) The system should be thoroughly vacuumed to 1.0 Pa (-700mmHg) or lower. This vacuuming level is more stringent than R22 system so as to ensure no incompressible gas and moisture in the system.

e) When charging R407C, ensure that only liquid is being withdrawn from the cylinder or can. This is to ensure that only the original composition of R407C is being delivered into the system. The liquid composition can be different from the vapor composition.



Composition of R407C in vapor phase is different from liquid phase.

f) Normally, the R407C cylinder or can is being equipped with a dip-pipe for liquid withdrawal. However, if the dip-pipe is not available, invert the cylinder or can so as to withdraw liquid from the valve at the bottom.



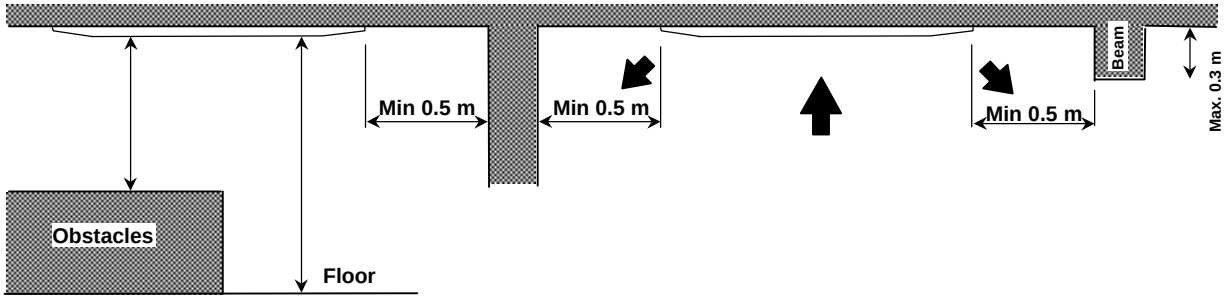
g) When servicing leak, the top-up method, commonly practiced for R22 system, is not recommended for R407C system. Unlike R22 where the refrigerant is of a single component, the composition of R407C, which made-up of three different components, may have changed during the leak. Consequently, a top-up may not ensure that the R407C in the system is of original composition. This composition shift may adversely affect the system performance. It is recommended that the system should be evacuated thoroughly before recharging with R407C.

9. INSTALLATION OF INDOOR UNIT

Caution : Sharp edges and coil surfaces are potential injury hazard. Avoid from contact with them.

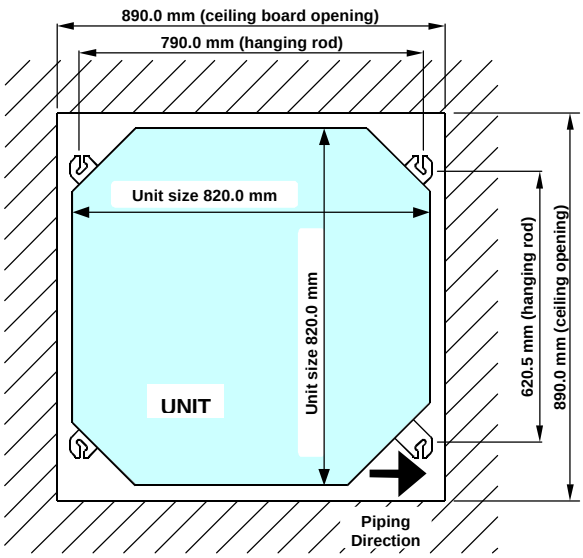
PRELIMINARY SITE SURVEY

- Electrical supply and installation is to conform to local authority's (e.g. National Electrical Board) codes and regulations.
- Voltage supply fluctuation must not exceed ± 10% of rated voltage. Electricity supply lines must be independent of welding transformer which can cause high supply fluctuations.
- Ensure that the location is convenient for wiring, piping and drainage
- The indoor unit must be installed in such that free from any obstacles in path of cool air discharge and warm air return, and must allow spreading of air throughout the room (near the center of the room)
- Clearance must be provided for the indoor unit from the wall and obstacles as shown in the figure.

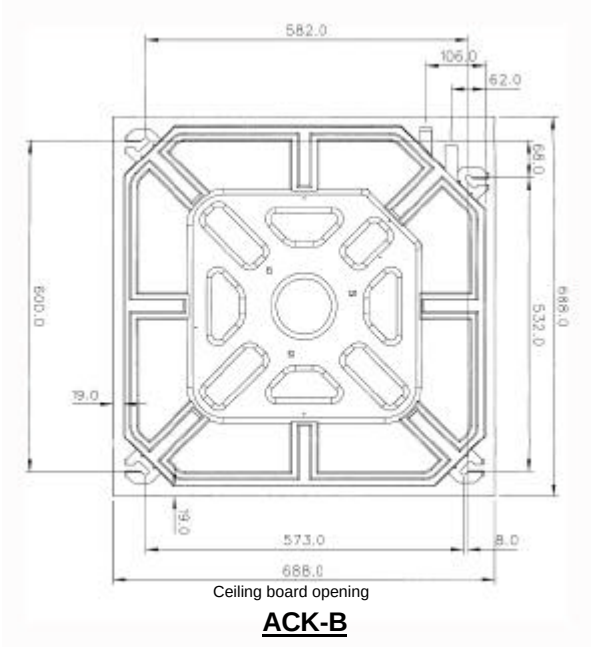


- The installation place must be strong enough to support a load of 4 times the indoor unit weight to avoid amplifying noise and vibration.
- The installation place (handing ceiling surface) must be level and the height in the ceiling is 350 mm or more.

UNIT INSTALLATION



ACK-A

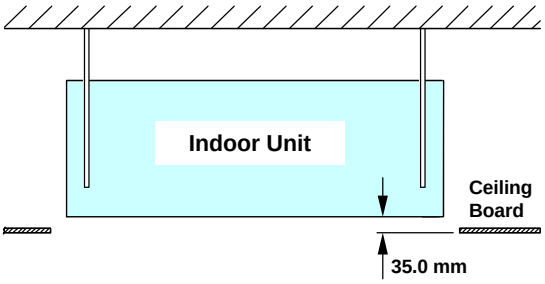


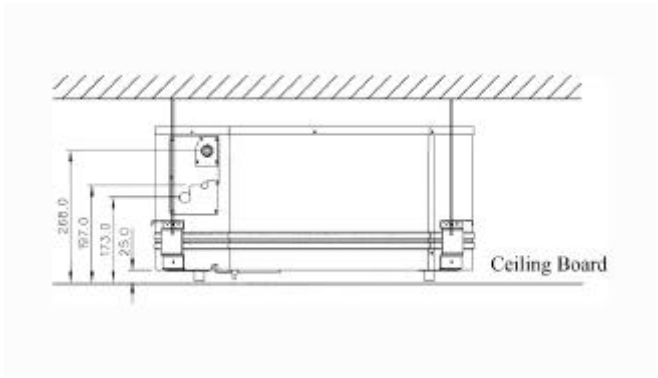
ACK-B

- The indoor unit must be away from heat and steam sources (avoid installing it near an entrance).
- Measure and mark the position for the hanging rod. Drill the hole for the angle nut on the ceiling and fix the hanging rod.
- The installation template is extended according to temperature and humidity. Check on dimensions in using.
- The dimensions of the installation template are same as those of the ceiling opening dimensions.
- Before ceiling laminating work is completed, be sure to fit the installation template to the indoor unit.

Note: Be sure to discuss the ceiling drilling work with the installers concerned.

UNIT HANGING

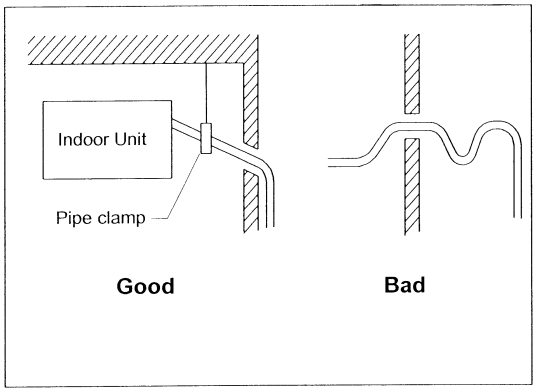




ACK-A **ACK-B**

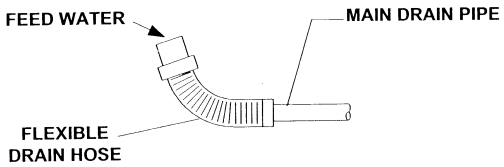
- Confirm the pitch of the hanging rod is 790.0mm X 620.5mm (ACK-A) / 600.0mm x 582.0 mm (ACK-B).
- Hold the unit and hang it on the hanging rod with the nut and washer.
- Adjust the unit height to 35.0 mm (ACK-A) / 25.0 mm (ACK-B) between the indoor unit bottom surface and the ceiling surface.
- Confirm with a level gauge that the unit is installed horizontally and tighten the nut and bolt to prevent unit falling and vibration.
- Open the ceiling board along the outer edge of the paper installation template.

DRAIN PIPING WORK



- Drain pipe must be downward gradient for smooth drainage.
- Avoid the drain pipe from up and down slope to prevent reversal flow.
- During the drain piping connection, be careful not to exert extra force on the drain connector at indoor unit.
- The outside diameter of the drain connection at the flexible drain hose is 20 mm.
- Be sure to provide heat insulation (polyethylene foam with thickness more than 8.0 mm) on the drain piping to avoid the condensed water dripping inside the room.

DRAIN TEST

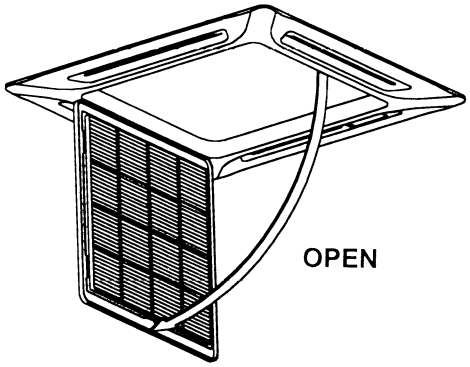


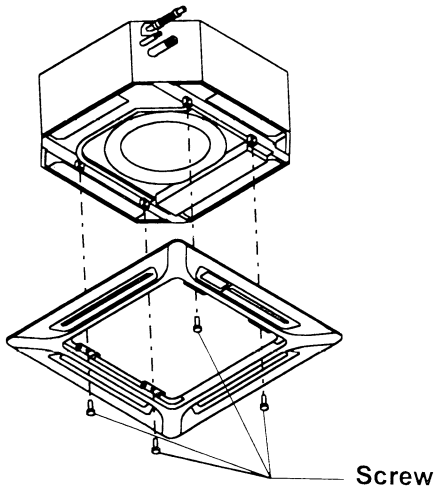
- Connect the main drain pipe to the flexible drain hose.
- Feed water from flexible drain hose and check the piping for leakage.
- When the test is completed, connect the flexible drain hose to the drain connector on the indoor unit.

Note: This indoor unit use drain pump for condensed water drainage. Installed the unit horizontally to prevent water leakage or condensation around the air outlet.

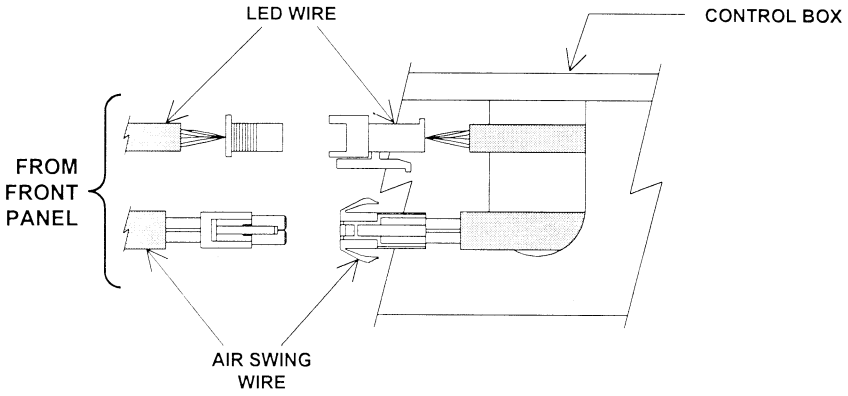
PANEL INSTALLATION

- The front panel can only be fitted in one direction, follow the piping direction. (Follow piping arrow sticker on front panel).
- Be sure to remove the installation template before installing the front panel.

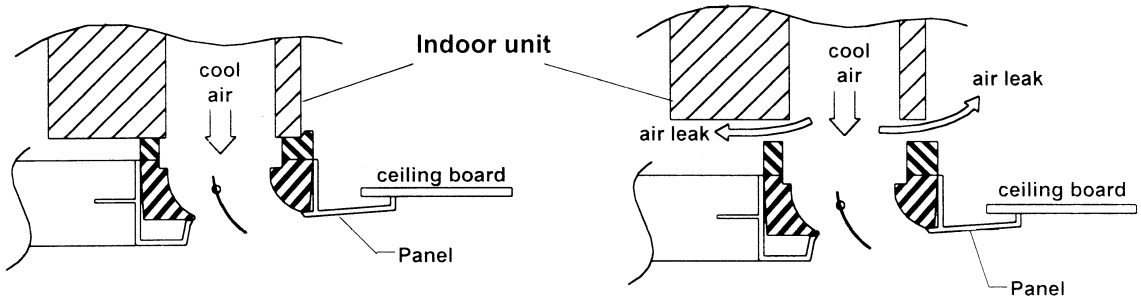




- Open the air intake grille by pulling back the catchers and remove it together with filter from panel.
- Install the front frame panel onto the indoor unit by using 4 screws and tighten it completely to prevent cool air leakage.
- Connect the LED wire and air swing wire to the indoor unit (Optional).



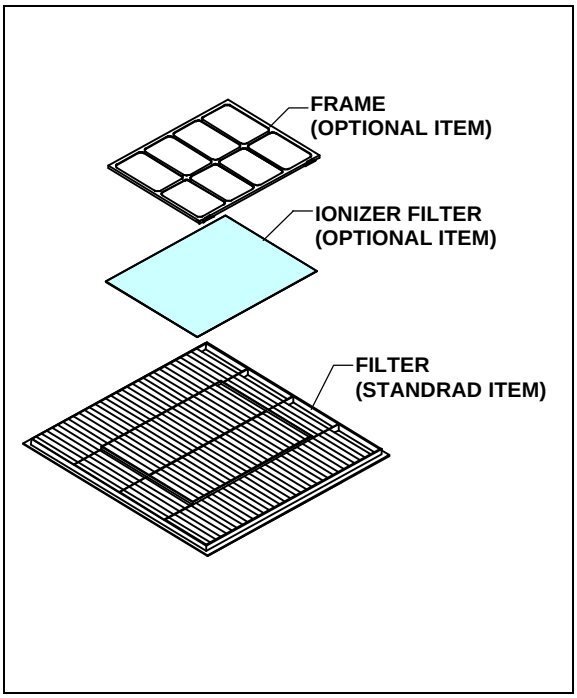
Note: Install the front frame panel firmly to prevent cool air leakage which will cause condensation and water dripping.



Good Installation **Bad Installation**

AIR INTAKE GRILLE INSTALLATION

- Before installed the air intake grille, make sure the air filter is clip properly to the air intake grille.
- Install the air intake grille together with the air filter to the front panel.
- The grille can be fit in any direction, when selecting direction, the ceiling design and grille operability should be considered.
- If the unit comes with ionizer filter (optional item), make sure to fix the ionizer filter to the air filter before installed the air intake grille.
- Fix the ionizer filter to the air filter with the black side on top and white side at bottom.
- Carefully clip on the ionizer filter frame.



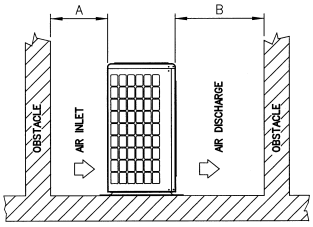
10. INSTALLATION OF OUTDOOR UNIT

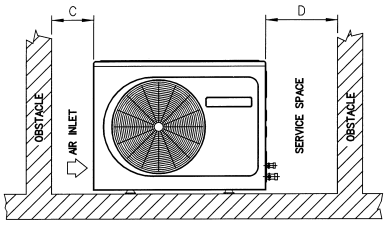
PRELIMINARY SITE SURVEY

- A place protected from rain, direct sunlight and well-ventilated wherever practicable.
- A place capable of carrying the weight of the outdoor unit and isolating noise and vibration.
- A place where there are no obstruction of air flow into or out the unit.
- Do not put any object which may block/reduce the air flow into or out the outdoor unit.
- The location must not be susceptible to high concentration of dust, oil, salt or sulfide gas.

OUTDOOR UNIT INSTALLATION

Install the outdoor unit firmly and horizontally. Maintain a space clearance from the obstruction as shown in below for the purpose of servicing and air ventilation.





ALL MODELS	A	B	C	D
Minimum Distance	300 mm	1000 mm	300 mm	500 mm

CAUTION : If the condensing unit is operated in an atmosphere containing oils(including machine oils), salt(coastal area), sulphide gas(near hot spring, oil refinery plant), such substances may lead to failure of the unit.

11. REFRIGERANT PIPING WORK

Refrigerant piping is important in particular. Refrigeration cycle of the split air conditioner is realized by the perfect piping work.

PIPING LENGTH AND ELEVATION

If the piping is too long, both the capacity and reliability of the unit will drop. As the number of bends increases, resistance to flow of refrigerant increases, thus lowering the cooling capacity and as a result overloading the compressor which may cause the compressor to become defective. Always choose the shortest path and follow the recommendation as tabulated below.

MODEL	Indoor	ACK15B/BR	ACK20A/AR ACK20B/BR	ACK25A/AR ACK25B/BR	ACK30A/AR ACK30B/BR		ACK40A/AR	ACK50A/AR
	Outdoor	ALC15B/BR	ALC20B/BR	ALC25B/BR	ALC30B	ALC30C/CR	ALC40C/CR	ALC50C/CR
Max. length (m)		10	15	15	15	35	35	35
Max. elevation (m)		5	8	8	8	15	15	15
Max. no. of bends		10	10	10	10	10	10	10
Liquid pipe size		1/4"	1/4"	3/8''	3/8''	3/8''	3/8"	3/8''
Gas pipe size		1/2"	5/8"	5/8''	5/8''	5/8''	3/4''	3/4''

PIPING CONNECTION

Do not use contaminated or damaged copper tubing. If piping for evaporator or condenser are exposed or had been opened for 15 seconds or more, vacuum and purge with field supplied refrigerant. Generally, do not remove plastic, rubber plugs and brass nuts from valves, fittings, tubing and coils until it is ready to do the connection for suction and liquid line.

If any brazing work is required, ensure that nitrogen gas is passed through coil and joints while brazing work is being carried out. This will eliminate soot formation on the inside wall of copper tubing.

Cut the pipe stage by stage, advance the blade of pipe cutter slowly. Extra force and deep cut will cause more distortion of pipe and therefore produce extra burr.

Remove burrs from cut edges of pipes with a remover. This will avoid unevenness on the flare face which will cause gas leak.

Align the center of the piping and sufficiently tighten the flare nut with fingers. Finally, tighten the flare nut with torque wrench until the wrench clicks.

Be sure to execute heat insulation (polyurethane form with thickness more than 15 mm).

Except the outdoor unit which is pre-charged with refrigerant, the indoor unit and the refrigerant connection pipes must be purged because the air that contain moisture remaining in the refrigerant cycle may cause malfunction to the compressor.

ADDITIONAL CHARGE

The refrigerant is pre-charged in the outdoor unit, but additional charge of refrigerant after vacuuming is necessary. Follow the recommendation as tabulated below.

Cooling Only

MODEL	INDOOR	ACK20A	ACK25A	ACK30A	ACK40A	ACK50A
	OUTDOOR	ALC20B	ALC25B	ALC30C	ALC40C	ALC50C
L <= 5 m		0.250	0.100	0.400	-	-
L = 7 m		0.280	0.176	0.600	0.100	0.100
L = 10 m		0.325	0.290	0.650	0.250	0.250
L = 15 m		0.400	0.480	0.900	0.500	0.500
L = 20 m		-	-	1.150	0.750	0.750
L = 35 m		-	-	1.500	1.500	1.500

Heat pump

MODEL	INDOOR	ACK20AR	ACK25AR	ACK30AR	ACK40AR	ACK50AR
	OUTDOOR	ALC20BRK	ALC25BRK	ALC30CR	ALC40CR	ALC50CR
L = 7 m		0.050	0.100	0.100	0.100	0.100
L = 10 m		0.075	0.500	0.250	0.250	0.250
L = 15 m		0.150	0.750	0.500	0.500	0.500
L = 20 m		-	-	0.750	0.750	0.750
L = 35 m		-	-	1.500	1.500	1.500

Cooling only

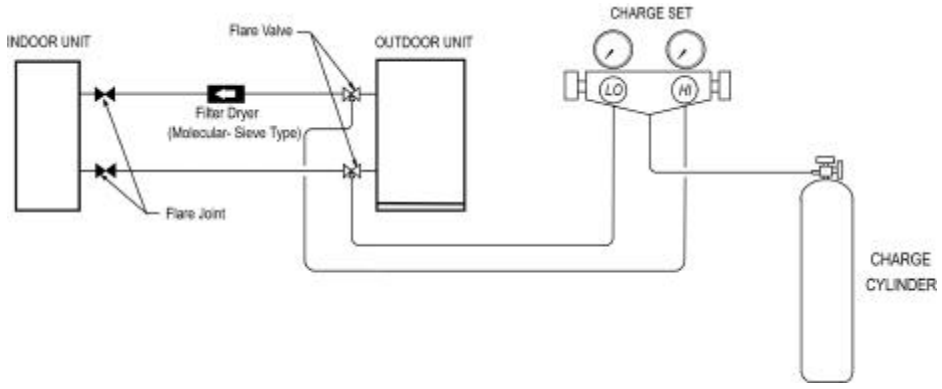
MODEL	INDOOR	ACK15B	ACK20B	ACK25B	ACK30B	
	OUTDOOR	ALC15B	ALC20B	ALC25B	ALC30B	ALC30C
L 5 m		0.250	0.250	0.100	0.100	0.400
L = 7 m		0.300	0.280	0.176	0.200	0.600
L = 10 m		0.325	0.325	0.290	0.350	0.650
L = 15 m		0.400	0.400	0.480	0.600	0.900
L = 20 m		-	-	-	0.850	1.150

Heat pump

MODEL	INDOOR	ACK15BR	ACK20BR	ACK25BR	ACK30BR
	OUTDOOR	ALC15BRK	ALC20BRK	ALC25BRK	ALC30CR
L = 7 m		0.050	0.050	0.100	0.100
L = 10 m		0.075	0.075	0.500	0.250
L = 15 m		0.150	0.150	0.750	0.500
L = 20 m		-	-	-	0.750

All refrigerant charge is in kg

Diagram shows typical charging method



CAUTION FOR R407C

Avoid prolong exposure of an opened compressor, or the internal part of refrigerant piping to moist air. The POE oil in the compressor and piping can absorb moisture from air.

12. WIRING

ELECTRICAL CONNECTIONS

Wiring regulations on wire diameters differ from country to country. Please refer to your LOCAL ELECTRICAL CODES for field wiring rules. Be sure that installation is complied with such rules and regulations.

GENERAL PRECAUTIONS

- Ensure that the rated voltage of the unit corresponds to the nameplate before carrying out proper wiring according to the wiring diagram.
- Provide a power outlet to be used exclusively for each unit. A power supply disconnect and a circuit breaker for over current protection should be provided in the exclusive line.
- All wiring must be GROUNDED to prevent possible hazards due to insulation failures.
- All wiring must be firmly connected.
- All wiring must not come in contact with the hot refrigerant piping, compressor or any moving parts of fan motors.

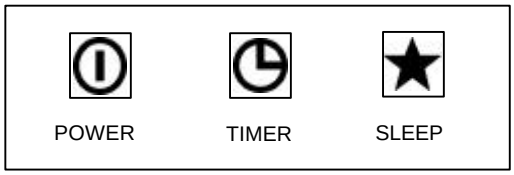
13. INDICATOR LIGHTS

REMOTE CONTROL

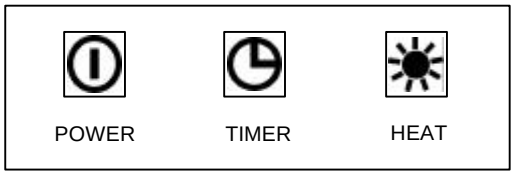
When there is infrared remote control operating signal, the signal receiver on indoor unit will made a <beep> for signal acceptance conformation.

WIRELESS REMOTE CONTROL (C3A BOARD)

Cooling : LED Indicator Light Display



Heatpump : LED Indicator Light Display



Self Diagnosis Table

COOL			HEAT			**Operation / Faulty Indication**
POWER	TIMER	SLEEP	POWER	TIMER	HEAT	
❍	❍ / ●	❍ / ●	❍	❍ / ●	❍ / ●	Power On
	⊙			⊙		Room / Indoor / Outdoor (For Heatpump) Coil Sensor Contact Loose / Short
⊙			⊙			Gas Leak Faulty / Compressor Overload
⊙	⊙		⊙	⊙		Condensate Water Overflow
					⊙	Outdoor Defrost (For Heatpump Only)

❍ ON ❍ / ● ON OR OFF ⊙ BLINKING

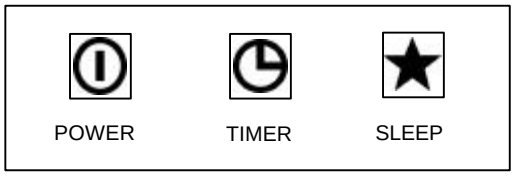
WIRED REMOTE CONTROL (C3A BOARD)

COOLING ONLY MODEL						**HEATPUMP MODEL**							**Operation / Faulty Indication**
HIGH FAN	MED. FAN	LOW FAN	COOL	SLEEP	TIMER	HIGH FAN	MED. FAN	LOW FAN	COOL	SLEEP	TIMER	HEAT	
		⊙						⊙					Room Sensor Contact Loose / Short
	⊙						⊙						Indoor Coil Sensor Contact Loose / Short
⊙						⊙							Outdoor Coil Sensor Contact Loose / Short
				⊙						⊙			Gas Leak
			⊙						⊙				Compressor Overload
					⊙						⊙		Condensate Water Overflow / pump error
												⊙	Outdoor Defrost (For Heatpump Only)

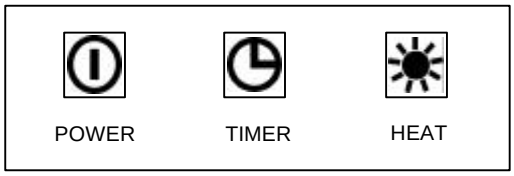
❍ ON ❍ / ● ON OR OFF ⊙ BLINKING

WIRELESS REMOTE CONTROL (UNIVERSAL BOARD)

Cooling : LED Indicator Light Display



Heatpump : LED Indicator Light Display



POWER	TIMER	SLEEP	HEAT	Operation / Faulty Indication
❍	❍			**Timer on**
❍		❍		**Sleep mode on**
❍			❍	**Heat mode**
⊙ Continuously			❍ / ●	**Frost prevention mode**
⊙ Once every 3 sec				**Compressor overload**
⊙⊙ Twice every 3 sec				**Pump fault**
⊙⊙⊙ 3 Times every 3 sec				**Gas leak**
⊙⊙⊙⊙ 4 Times every 3 sec				**Room/indoor/outdoor coil sensor contact loose/short**

❍ ON ❍ / ● ON OR OFF ⊙ BLINKING

WIRED REMOTE CONTROL (UNIVERSAL BOARD)

Cooling / Heatpump Model

Error Code at 7 Segment Display	Operation / Faulty Indication
E1 Blinking	Room Sensor Contact Loose / Short
E2 Blinking	Indoor Coil Sensor Contact Loose / Short
E3 Blinking	Outdoor Coil Sensor Contact Loose / Short
E4 Blinking	Compressor Overload
E5 Blinking	Gas Leak
E6 Blinking	Pump Faulty
Heat LED Blinking	Outdoor Defrost (For Heatpump Only)

Water Pump

The water pump will on if compressor is on during cooling cycle. The pump will remain on for at least 5 minutes after the compressor is off.

During mode change from cooling to non-cooling mode, the pump will on for minimum 5 minutes. During defrost cycle, the pump will on and will on for another 5 minutes once the defrost cycle is terminated.

Water level Switch

This normally close switch is to detect faults in water pump system. It will confirm for 30 seconds for switch open and 60 seconds for switch close.

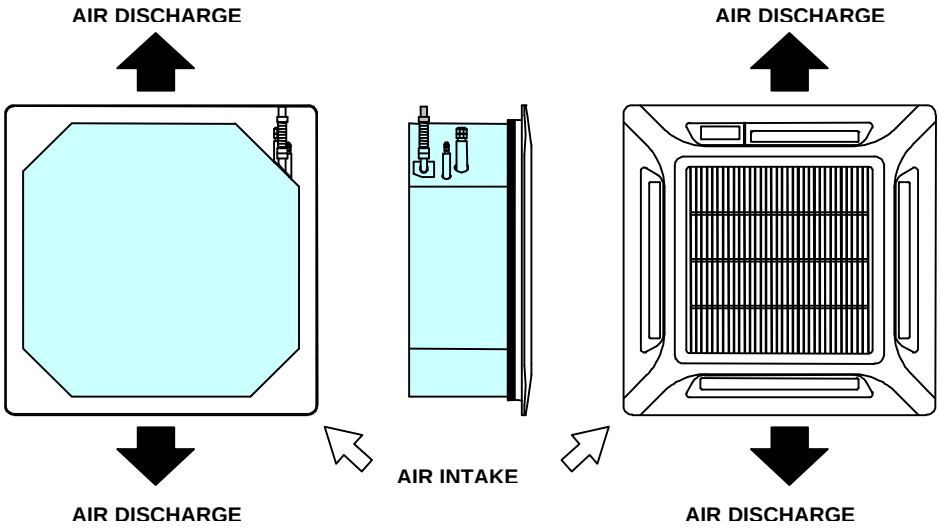
Once switch is confirmed open, it will force compressor to cut off. If the switch is closed within 5 minutes, the compressor is allowed to cut in. If the switch does not close for more than 5 minutes, the system will warn user regarding the fault, the compressor is not allowed to cut in. If the switch is confirmed opened twice within 30 minutes, the system assumes there are faults.

14. ACCESSORY PARTS

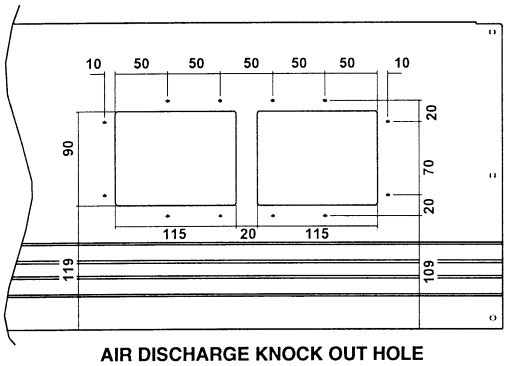
SHORT DUCT SPECIFICATION

- The indoor unit is provided with air discharge and air intake "knock-out". hole for duct connection. However the connection of the short duct for air discharge is possible on only one side.
- The use of short duct for air discharge will improve airflow distribution if there is an obstruction (such as alighting fixture) or in a long, narrow room or an L-shaped room. It is also used for air conditioning of two rooms simultaneously.

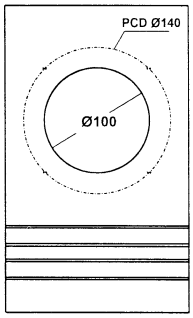
POSSIBLE DIRECTION FOR AIR DISCHARGE AND AIR INTAKE



POSSIBLE OPENING DIMENSION FOR DUCT CONNECTION



AIR DISCHARGE KNOCK OUT HOLE



AIR INTAKE KNOCK OUT HOLE

Note :

1. **Avoid to use the short duct on which the air discharge grille can be completely closed, to prevent evaporator freezing.**
2. **In order to prevent condensation forming, be sure that there is sufficient thermal insulation and no leakage of cool air when installing the short duct.**
3. **Keep the introduction of fresh air intake within 20% of total air flow. Also provide a chamber and use a booster fan.**

SEALING MATERIAL

- It is possible to seal one of the four air discharge outlet (sealing two or more air discharge outlet could cause a malfunction).
- Remove the front panel and inserting the seal material into the air discharge outlet at the indoor unit to seal the air outlet.
- The sealing material is the same length as the longer air discharge outlet. If it is desired to seal the shorter air discharge outlet, cut the sealing material to shorten it.
- Push the sealing material in about 10 mm beyond the bottom surf-ace of the indoor unit so that it does not touch the air louver. Be sure not to push the sealing material in any farther than about 10 mm.

15. OVERALL CHECKING

- Ensure the following in particular:
  1) The unit is mounted solidly and rigidly in position.
  2) Piping and connections are leak proof after charging.
  3) Proper wiring has been done.

- Drainage check - pour some water into the main drain pipe from the flexible drain hose.

- Test run
  1) Conduct a test run after water drainage test and gas leakage test.
  2) Watch out for the following:
  a) Is the electric plug firmly inserted into the socket.
  b) Is there any abnormal sound from the unit.
  c) Is there any abnormal vibration with regard to the unit itself or piping.
  d) Is there smooth drainage of water.

- Check that:
  1) Condenser fan is running, with warm air blowing off the condensing unit.
  2) Evaporator blower is running and discharge cool air.
  3) The remote control incorporate a 3 minute delay in the circuit. Thus, it requires about 3 minutes before the outdoor condensing unit can start up.

16. STANDARD OPERATION CONDITIONS

TEMPERATURE	**Ts°C**	**Th°C**
MINIMUM INDOOR TEMPERATURE	19.4	13.9
MAXIMUM INDOOR TEMPERATURE	26.7	19.4
MINIMUM OUTDOOR TEMPERATURE	19.4	13.9
MAXIMUM OUTDOOR TEMPERATURE	46.0	24.0

TEMPERATURE	**Ts°C**	**Th°C**
MINIMUM INDOOR TEMPERATURE	10.0	**-**
MAXIMUM INDOOR TEMPERATURE	26.7	**-**
MINIMUM OUTDOOR TEMPERATURE	- 8.0	- 9.0
MAXIMUM OUTDOOR TEMPERATURE	24.0	18.0

Ts : Dry bulb temperature
Th : Wet bulb temperature

17. REMOTE CONTROL OPERATION GUIDE

G6 REMOTE CONTROLLER

7

FAN SPEED AND VENTILATION MODE SELECTION

Press the button until the desired fan speed is achieved.

8

SIGNAL TRANSMISSION INDICATION

- Blink to confirm the last setting has been send to the unit.

2

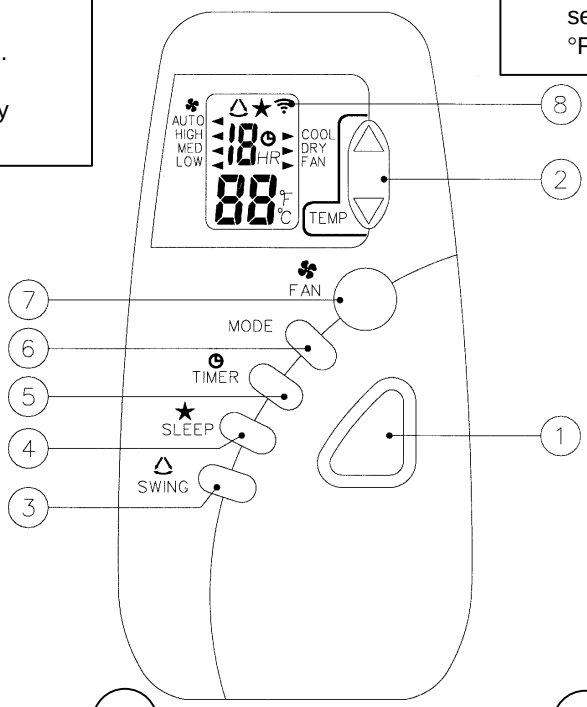
TEMPERATURE SETTING

- Set the desire room temperature.
- Press button to increase or decrease the set temperature. Setting range are between 16°C to 30°C setting (60°F to 80°F)(Optional setting from 20°C to 30°C).
- Press ▲ or ▼ button simultaneously will toggle the temperature setting between °C and °F.

6

OPERATION MODES

- Press the “mode” button for select the type of operating mode.
- Cooling only unit: Cool →Dry →Fan.
- Heatpump unit : Auto →Cool →Dry →Fan →Heat



5

TIMER SETTING

- Press set button to activate the timer setting (from 1 hour to 15 hour) of the air conditioning unit. It will be in"On" or "Off" condition after the set time depending to the current condition (either from "On" to Off" or vise versa)
- To cancel the timer setting, press the button continuosly until the timer display goes off.

4

SLEEP MODE

- Press the button to activate sleep mode. This mode can only be activated while in cooling or heating mode operation. If it is activated in “COOL” mode, the set temperature will be increase 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours. Whereas in “HEAT” mode, the set temperature will decrease by 1°C after 30mins, 2°C after 1 hour and 3°C after 2 hours.
- This function is available under COOL, HEAT & AUTO mode.

1

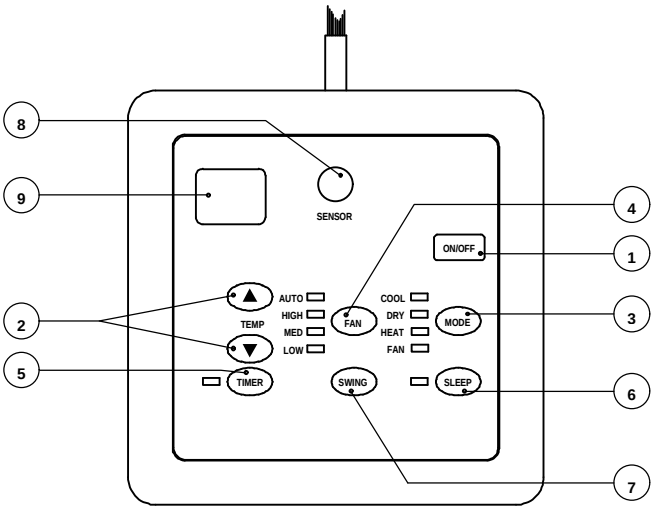
ON / OFF switch

- Press to start the air conditioner unit.
- Press again to stop the unit.

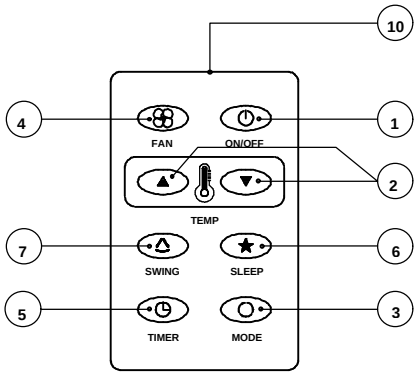
3

AUTOMATIC AIR SWING

- Press the button to activate the automatic air swing function. The swing angle ranging from horizontal to 25° to bottom.



SLM



AC-5300 (OPTIONAL)

1. "ON/OFF" switch
- Press to start the air conditioner unit.
- Press again to stop the unit.

2. Temperature setting
- Set the desired room temperature.
- Press button to increase or decrease the set temperature. Setting range are between 16°C to 30°C (60°F to 80°F).

3. Operation Modes
- Press the "mode" button for select the type of operating mode.
  - Cooling Only :
    COOL, DRY, FAN
  - Heat Pump :
    AUTO, COOL, DRY, HEAT, FAN
    (AUTO mode is represented by both COOL and HEAT LED light on)

4. Fan Speed selection.
- Press the button until the desired fan speed is achieved.

5. Timer.
- Press the set button to select the switch timer of the air conditioner unit (the setting range is between 1 to 10 hours).

6. "Sleep" mode
- Press button to activate the sleep function. This function can only be activated under "cool" or heating mode operation. When it is activated under "cool" mode operation, the set temperature will increase 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours. If it is activated under "HEAT" mode operation, the set temperature will be decreased 0.5° C after 30 minutes, 1° C after 1 hour and 2° C after 2 hours.

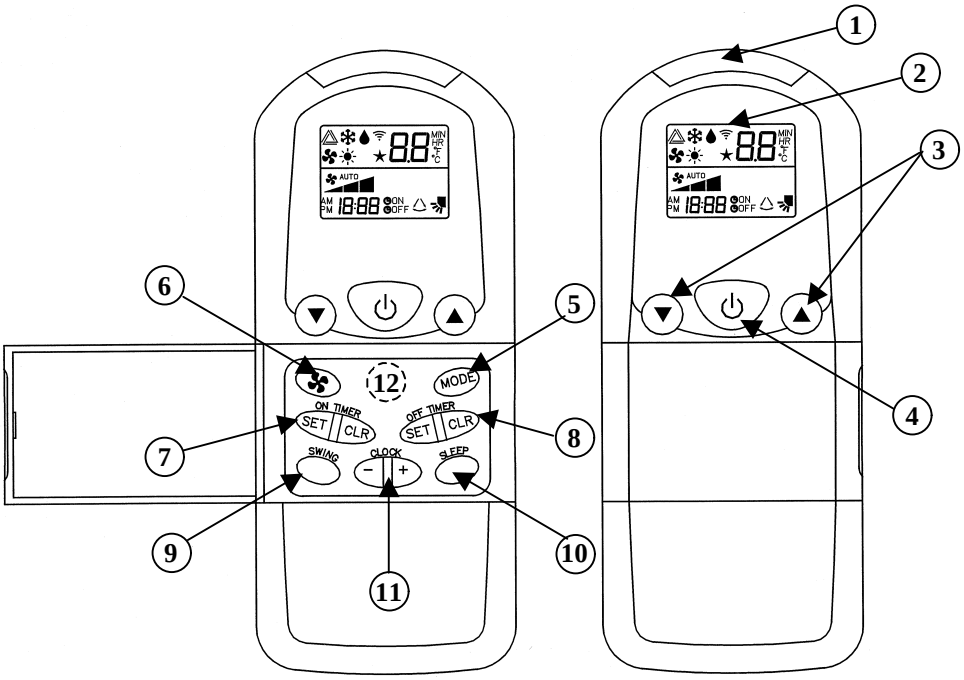
7. Air Swing
- Press button to activate the automatic air swing function.

8. Sensor
- Infra red sensor to receive signals from wireless controller.

9. LED display
- To display the set temperature (in º C) and timer delay setting (in hours).

10. Transmission source
- To transmit signals to the air conditioner**.**

G8 REMOTE CONTROLLER



1. Transmission source
- The source where the signal will be transmitted.

2. Signal Transmission indication
- Blink to confirm the last setting has been send to the unit.

3. On/Off Button
- Press once to start the air conditioner.
- Press again to stop the unit.

4. Temperature setting
- To set the desired room temperature, press the button to increase or decrease the set temperature.
- The temperature setting range is from 16°C to 30°C (Optional setting 18°C to 30°C).
- Press both buttons simultaneously to toggle the temperature setting between °C and °F.

5. Operation mode
- Press the MODE button to select the type of operating mode.
- For cooling only unit, the available modes are : COOL, DRY & FAN.
- For heat pump unit, the available modes are : AUTO, COOL, BRY, FAN & HEAT.

6. Fan speed selection
- Press the button until the desired fan speed is achieved.

7. ON timer setting
- Press the SET button will activate the on timer function.
- Set the desired on time by pressing the SET button continuously. If the timer is set to 7.30am, the air conditioner will turn on at 7.30am sharp.
- Press the CLR button to cancel the on timer setting.

8. OFF timer setting
- Press the SET button will activate the off timer function.
- Set the desired off time by pressing the SET button continuously.
- Press the CLR button to cancel the off timer setting.

9. Automatic air swing
- Press the SWING button to activate the automatic air swing function.
- To distribute the air to a specific direction, press the SWING button and wait until the louver move to the desired direction and press the button once again.

10. Sleep mode setting
- Press the button to activate sleep mode. This function is available under COOL, HEAT & AUTO mode.
- When it is activated in COOL mode, the set temperature will be increased 0.5°C after 30mins, 1°C after 1 hour and 2°C after 2 hours.
- When it is activated in HEAT mode, the set temperature will be decreased 1°C after 30mins, 2°C after 1 hour and 3°C after 2 hours.

11. Clock time setting
- Press button + or – to increase or decrease the clock time.

12. Turbo function (optional)
- Press button for fast cooling or heating operation.
- The temperature will be increased internally if it is in the HEAT mode, decreased if in COOL or DRY mode. Fan speed will be increased if it is not at maximum speed.
- The temperature & fan speed will resume to user setting if the button is pressed again or after 20mins.
- Available under HEAT, COOL & DRY modes only.

18. SERVICE AND MAINTENANCE

Warning: Disconnect from main supply before servicing the air conditioner.

The unit is designed to give long life operation with minimum maintenance required. However, it should be regularly checked and the following items should be given due attention.

Components	Maintenance Procedure	Recommended Schedule
Air filter (Indoor Unit)	1. Remove the ionizer filter before cleaning the filter. 2. Remove the dust adhering on the filter by using a vacuum cleaner or wash using water less than 40°C with a neutral cleaning detergent. 3. Rinse and dry it before fitting back the ionizer filter and set it back to unit. **4. Note : Never use petrol, thinner, benzene or any other chemicals.**	At least once a month.
Indoor unit	1. Clean away dirt or dust on grille or panel by wiping with a soft cloth soaked in lukewarm (or cool) water or neutral detergent solution. **2. Note : Never use petrol, thinner, benzene or other volatile chemicals, which may cause plastic surface to deform.**	At least once a month.
Condense Drain Pan & Pipe	1. Check the cleanliness and clean it if necessary. 2. Check the condensate water flow	Every 3 months.
Indoor Fan	Check if there is any abnormal noise.	If necessary
Indoor/Outdoor Coil	1. Check and remove the dirt between the fins. 2. Check and remove any obstacles which hinder air flow through the indoor or outdoor.	Every month.
Power Supply	1. Check the running current and voltage for indoor and outdoor unit. 2. Check the electrical wiring and tighten the wire onto the terminal block if necessary.	Every 2 months Every year
Compressor	No maintenance needed if refrigerant circuit remains sealed. However, check for refrigerant leak at joint and fitting.	Every 6 months.
Compressor Oil	Oil is factory charged. Not necessary to add oil if circuit remains sealed.	No maintenance required.
Fan Motor Oil	All motors are pre-lubricated and sealed at factory.	No maintenance required.

19. PRE START UP MAINTENANCE

After Extended Shutdown

- Inspect thoroughly and clean indoor and outdoor units.
- Clean or replace air filter.
- Clean condense drain line.
- Clean clogged indoor and outdoor coils.
- Check fan imbalance before operation.
- Tighten all wire connections.
- Check for refrigerant leakage,

Note: The crankcase heater should be energized for at least 6 hours before start of operation (after extended shutdown).

20. TROUBLESHOOTING

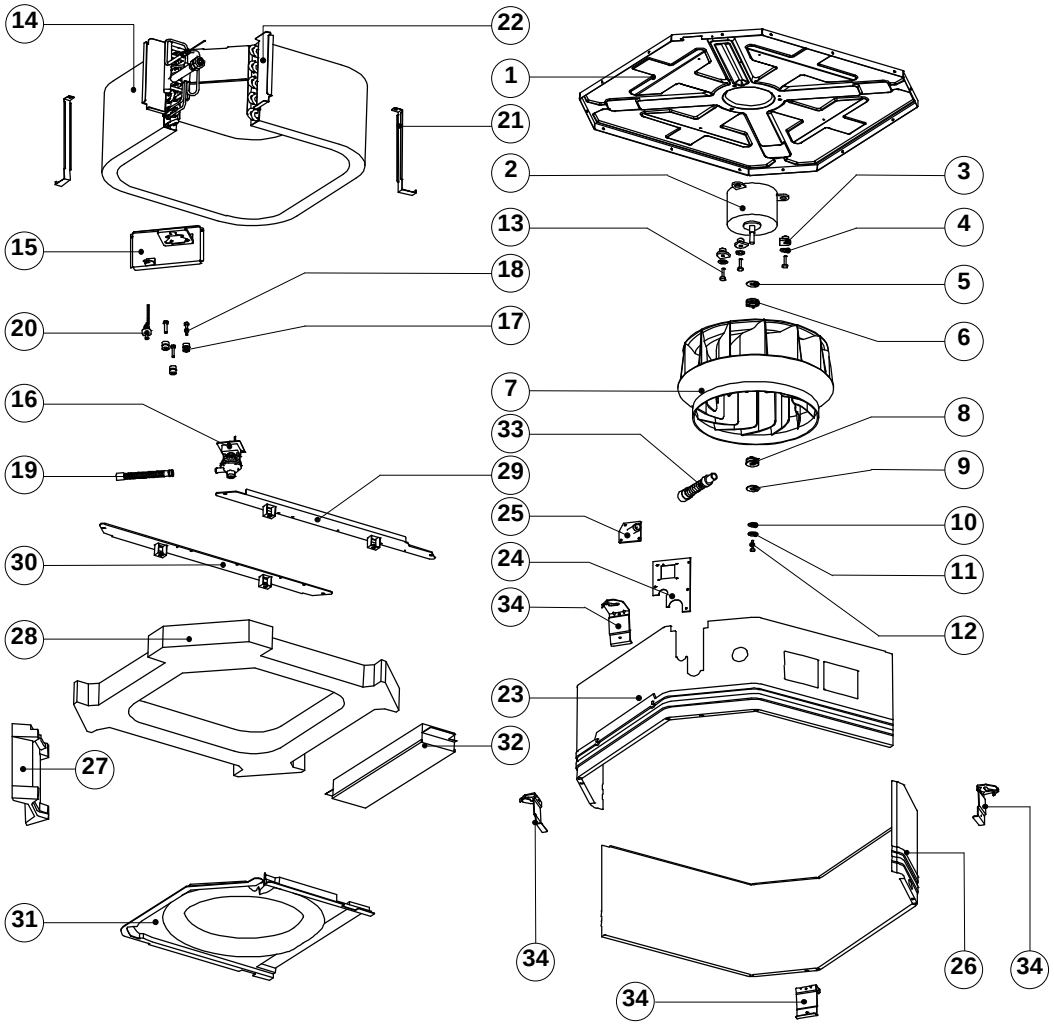
When any air conditioner malfunction is noted, immediately switch off the power supply to the unit, and contact the local dealer, if necessary. Some simple trouble shooting tips are given below:

Fault	Cause
1. Compressor does not work 3 minutes after starting.	• Protection against frequent starting. Wait for 3 to 4 minutes.
2. The unit does not work.	• Power failure or need to replace the fuse. • The power plug is disconnected. • It is possible that your delay timer has been set incorrectly. • If the fault persist after the verifications, contact your installer.
3. The air flow is too low.	• The air filter is dirty. • The door and windows are opened. • The suction and discharge are clogged.
4. The remote control light is dim.	• Battery flat. • Batteries are incorrectly inserted or misplaced.
5. Air discharge has bad odor.	• Odors may be caused by cigarette, smoke particles, perfume etc.. which adhere to the coil.
6. Condensation on the front panel	• This is due to air humidity after a long time operation. • The set temperature is too low, increase the temperature and change it to high fan.
7. Hissing sound during operation	• Refrigerant flow into evaporator coil.

If the fault persist, call your local dealer.

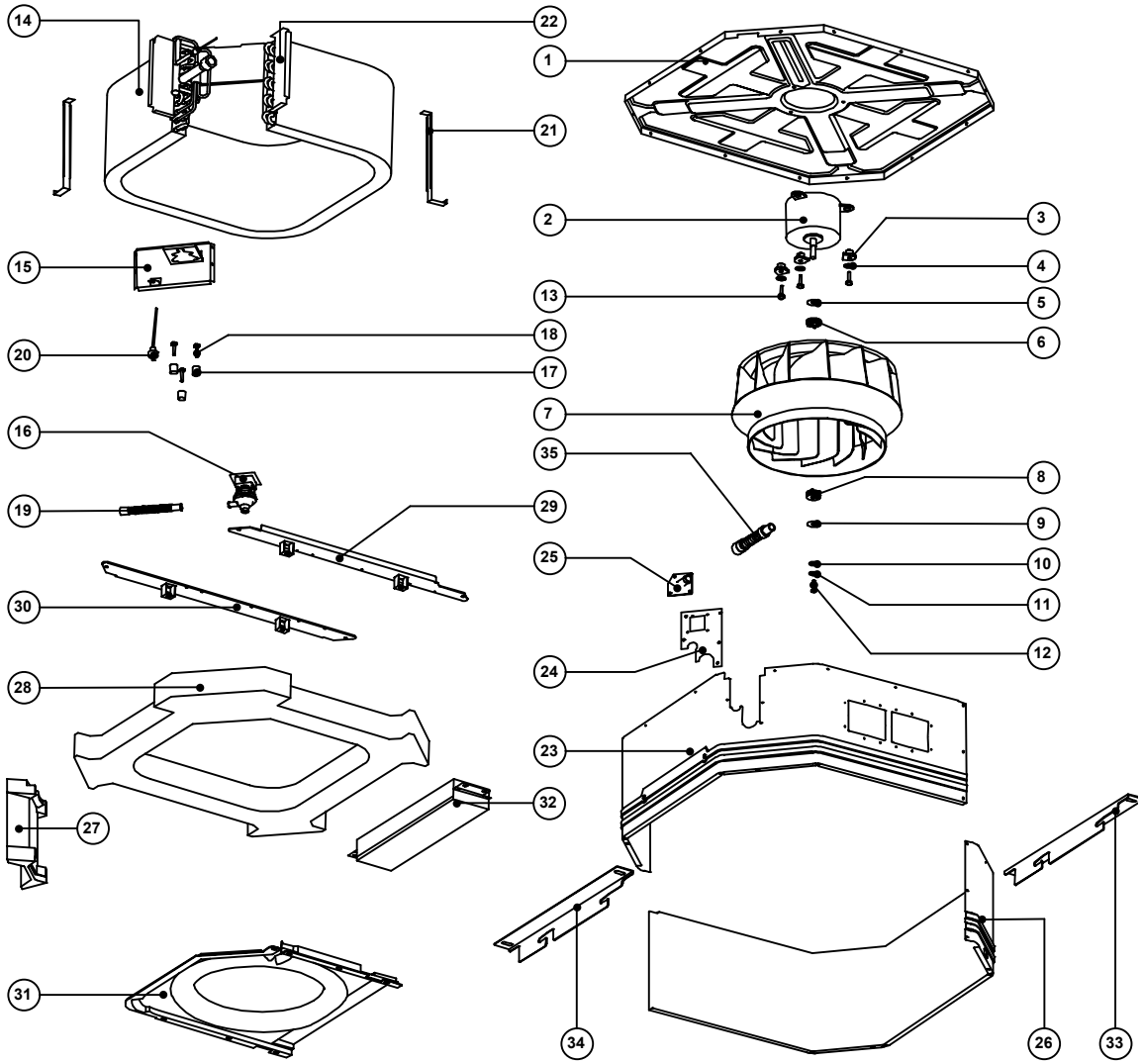
21. PARTS LIST

UNIT (NEW HANGER)



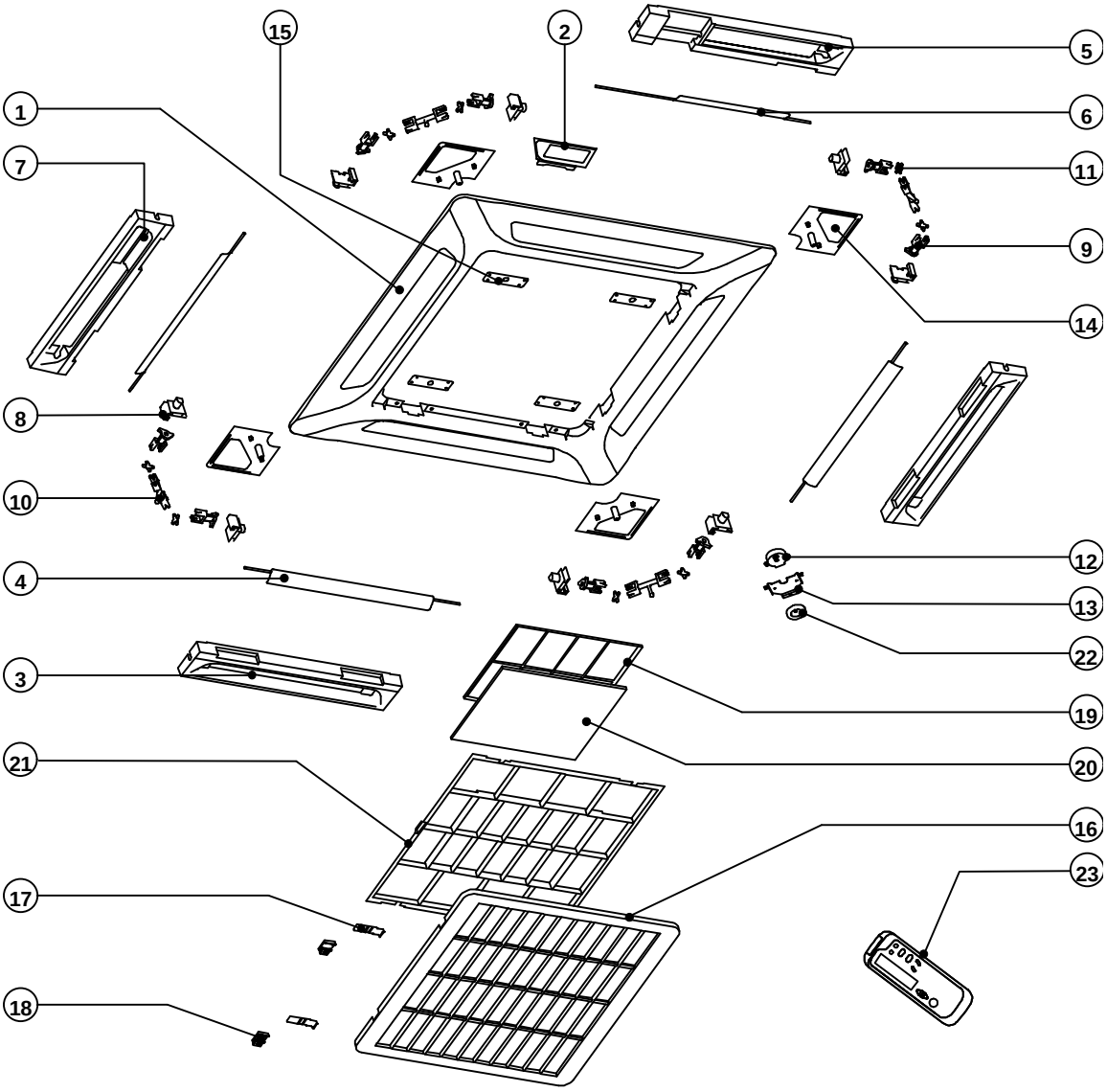
NO.	PARTS DESCRIPTION	NO.	PARTS DESCRIPTION
1	BASE PAN	18	HEXAGON BOLT
2	FAN MOTOR	19	DRAIN HOSE
3	FAN MOTOR BUSH	20	LEVEL SWITCH
4	PLAIN WASHER	21	COIL SUPPORT
5	FAN MOTOR WASHER	22	PARTITION
6	BOTTOM COUPLING	23	SIDE PANEL FRONT
7	TURBO FAN	24	VALVE PLATE
8	TOP COUPLING	25	DRAIN CONNECTOR
9	FLAT WASHER	26	SIDE PANEL BACK
10	PLAIN WASHER	27	AIR GUIDE
11	SPRING WASHER	28	DRAIN PAN
12	HEXAGON BOLT	29	FIX BRACKET FRONT
13	HEXAGON BOLT	30	FIX BRACKET BACK
14	EVAPORATOR COIL	31	FAN COVER
15	DRAIN PUMP BRACKET	32	TERMINAL BOX
16	DRAIN PUMP	33	DRAIN PIPE
17	DRAIN PUMP BUSH	34	HANGER BRACKET A, B & C

UNIT (WITH OLD HANGER BRACKET)



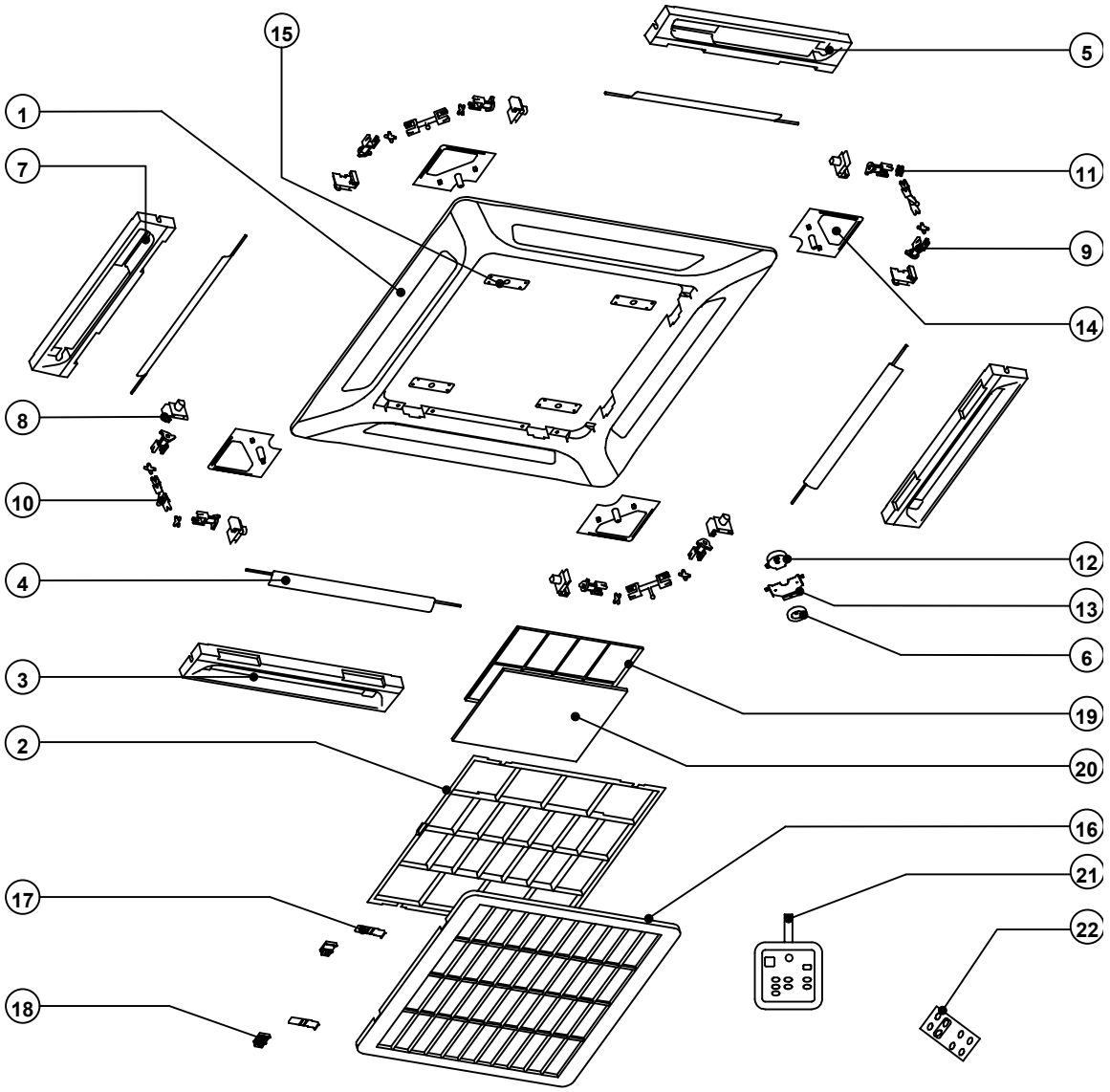
NO.	PARTS DESCRIPTION	NO.	PARTS DESCRIPTION
1	BASE PAN	19	DRAIN HOSE
2	FAN MOTOR	20	LEVEL SWITCH
3	FAN MOTOR BUSH	21	COIL SUPPORT
4	PLAIN WASHER	22	PARTITION
5	FAN MOTOR WASHER	23	SIDE PANEL FRONT
6	BOTTOM COUPLING	24	VALVE PLATE
7	TURBO FAN	25	DRAIN CONNECTOR
8	TOP COUPLING	26	SIDE PANEL BACK
9	FLAT WASHER	27	AIR GUIDE
10	PLAIN WASHER	28	DRAIN PAN
11	SPRING WASHER	29	FIX BRACKET FRONT
12	HEXAGON BOLT	30	FIX BRACKET BACK
13	HEXAGON BOLT	31	FAN COVER
14	EVAPORATOR COIL	32	TERMINAL BOX
15	DRAIN PUMP BRACKET	33	HANGER BRACKET RIGHT
16	DRAIN PUMP	34	HANGER BRACKET LEFT
17	DRAIN PUMP BUSH	35	DRAIN PIPE
18	HEXAGON BOLT		

PANEL (WIRELESS REMOTE CONTROL)



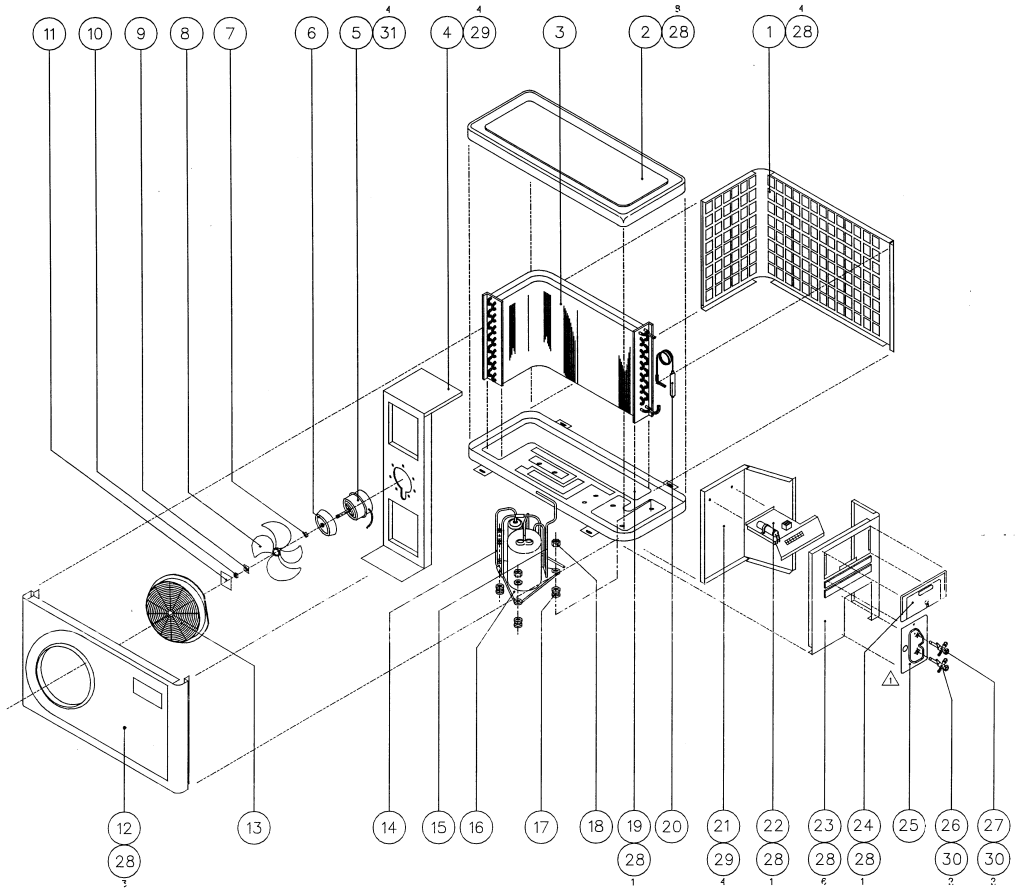
NO.	PART DESCRIPTION	NO.	PART DESCRIPTION
1	FRONT PANEL	13	SWING MOTOR BRACKET
2	RECEIVER BRACKET	14	PANEL COVER
3	DISCHARGE HOUSING A	15	FIX PLATE
4	METAL LOUVER A	16	AIR INTAKE GRILLE
5	DISCHARGE HOUSING B	17	GRILLE LOCK
6	METAL LOUVER B	18	GRILLE LOCK BRACKET
7	DISCHARGE HOUSING D	19	IONIZER FILTER FRAME
8	LOUVER BRACKET	20	IONIZER FILTER
9	CRANK SHAFT	21	AIR FILTER
10	CRANK CONNECTOR	22	AIR SWING CAP
11	CRANK CROSS	23	REMOTE CONTROL
12	SWING MOTOR		

PANEL (WIRED REMOTE CONTROL)



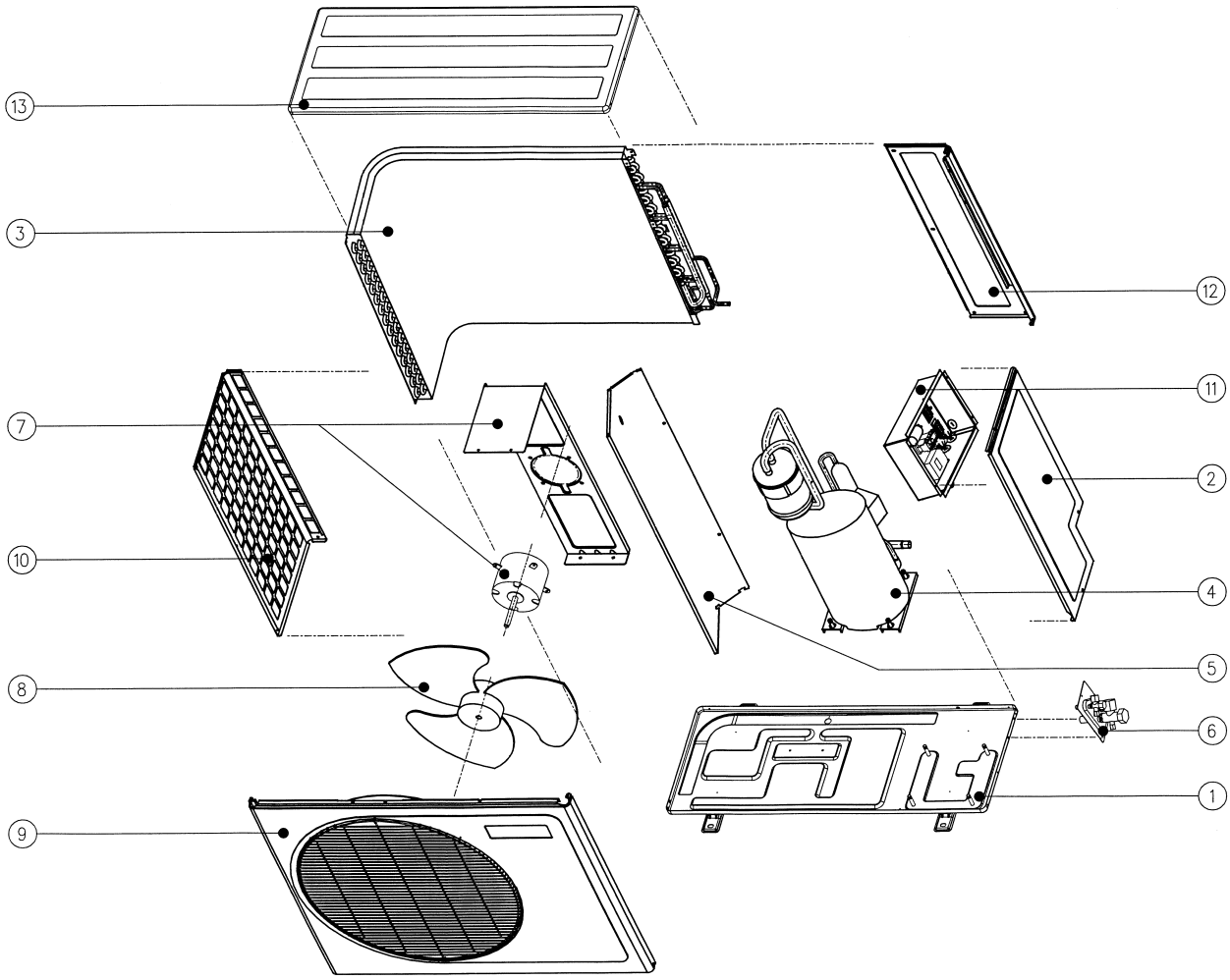
	PART DESCRIPTION	NO.	PART DESCRIPTION
1	FRONT PANEL	12	SWING MOTOR
2	AIR FILTER	13	SWING MOTOR BRACKET
3	DISCHARGE HOUSING A	14	PANEL COVER
4	METAL LOUVER A	15	FIX PLATE
5	DISCHARGE HOUSING C	16	AIR INTAKE GRILLE
6	AIR SWING CAP	17	GRILLE LOCK
7	DISCHARGE HOUSING D	18	GRILLE LOCK BRACKET
8	LOUVER BRACKET	19	IONIZER FILTER FRAME
9	CRANK SHAFT	20	IONIZER FILTER
10	CRANK CONNECTOR	21	REMOTE CONTROL
11	CRANK CROSS	22	CARD REMOTE CONTROL

MODEL : ALC 20B / 25B



NO	PARTS DESCRIPTION	NO	PARTS DESCRIPTION
1	ASSY., BACK PANEL	17	GROMMET, RUBBER
2	ASSY., TOP PANEL	18	NUT, WITH WASHER
3	ASSY., CONDENSER COIL	19	ASSY., BASE PAN
4	BRACKET, MOTOR MOUNTING	20	ASSY., CAPILLARY TUBE
5	MOTOR, FAN	21	ASSY., PARTITION
6	FLINGER	22	ASSY., TERMINAL BOX PANEL W/O CONT.
7	WASHER, RING	23	ASSY., SIDE PANEL
8	FAN BLADE	24	ASSY., ACCESS PANEL
9	WASHER, SQUARE	25	PLATE, FLARE VALVE
10	HEX. NUT	26	VALVE, FLARE C/W ACC. (5/8”)
11	LABEL, BLACK	27	VALVE, FLARE C/W ACC. (2WM)
12	PANEL, FRONT		VALVE, FLARE C/W ACC. (3/8”)
13	OUTER NOZZLE	28	SCREW, TRUSS HEAD
14	ASSY., SUCTION TUBE W/ DAMPER	29	SCREW, PAN HEAD
15	ASSY., DISCHARGE TUBE WITH R/DAMPER	30	SCREW, ROUND HEAD
16	COMPRESSOR, ROTARY	31	SCREW, TRUSS HEAD

MODEL : ALC 30/ 40/ 50 C/ CR



NO	PARTS DESCRIPTION	NO	PARTS DESCRIPTION
1	BASE PAN ASY.	8	FAN BLADE
2	ACCESS / SERVICE PANEL	9	FRONT PANEL ASSY.
3	CONDENSER COIL ASSY.	10	SIDE PANEL LEFT
4	COMPRESSOR	11	TERMINAL BOX ASSY.
5	PARTITION PANEL	12	BACK PANEL
6	VALVE PLATE ASSY.	13	TOP PANEL
7	FAN MOTOR & BRACKET ASSY.		